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GEOLOGY AND GROUNDWATER RESOURCES OF WESTERN CRAWFORD COUNTY, PENNSYLVANIA

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PREFACE

Groundwater is an important natural resource of western Crawford County. This report presents the results of a comprehensive examination of the groundwater resources of this area of growing population. With increasing diversity of land use it is appropriate that there should be a detailed evaluation of the groundwater resources, upon which decisions regarding planning, development, and conservation can be made.

The data in this report and the geologic and hydrologic maps will be of benefit to all who reside in the area as well as industry and local officials responsible for planning. The character of the rock formations and the nature of their contained water have a definite impact on utilization of land. Water needs of the community require having this knowledge to effectively plan for proper development to the benefit of all citizens. This report is intended to service their needs.

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ABSTRACT

Western Crawford County is in northwestern Pennsylvania. The project area is 15 to 20 miles south of Lake Erie and is bordered on the west by Ohio.

Drift of Pleistocene age (Wisconsinan Age) covers most of the area, which is a maturely dissected plateau. The drift in the upland area is mostly till, which ranges in thickness from 0 to 25 feet. In the large stream valleys and deep buried valleys the drift is as much as 500 feet thick.

The bedrock was mapped in detail and consists of rocks of Devonian, Mississippian, and Pennsylvanian age. Devonian rocks underlie the entire area and form the bedrock surface in most of the northern one third of the area and in the deep bedrock valleys. Mississippian formations underlie the uplands in the southern two thirds of the area; these are capped by thin remnants of Pennsylvanian rocks and knobs near the south edge of the area.

The most productive aquifers are composed of glacial outwash, which constitutes parts of the valley fill. Wells tapping these aquifers are generally less than 100 feet deep and supply the needs of all the large industries and municipalities, except the Borough of Linesville. One well was tested at 2,000 gallons per minute and had a specific capacity of 114 gallons per minute per foot of drawdown. A little-used well field in the vicinity of Conneaut Outlet, at the southeastern edge of the area, has a potential yield of at least 23 million gallons per day.

About three of every four wells drilled tap bedrock formations. Yields of bedrock wells are generally related to the number and thickness of fractured sandstone and siltstone beds penetrated and the thickness and permeability of the overlying drift. Shale formations yield only small quantities of water. The best bedrock aquifers are the Sharpsville and Cussewago Sandstones of Mississippian age. Under optimum conditions either formation may yield more than 100 gallons per minute to wells. Maximum yields from the bedrock can be obtained, in general, only by wells that completely penetrate the Cussewago Sandstone.

The lowest yielding wells tap the predominantly shale Devonian bedrock, the till on the uplands, and the clayey and silty glacial lake deposits in the valley bottoms. These wells commonly yield less than 3 gallons per minute.

Potable water can generally be obtained from the Mississippian and Pennsylvanian bedrock formations and from the drift. However, enough potable water to sustain households is locally unavailable from the Devonian rock. Salty water is often found at depths of about 50 feet in the Devonian, and chloride concentrations increase rapidly with depth of penetration.

The quality of water is generally related to the depth of the water-yielding zones. Shallow aquifers, less than about 75 feet below land surface, commonly yield hard to very hard water that is locally high in iron. Aquifers from about 75 to 200 feet deep generally yield moderately hard to hard water that is low in iron. Aquifers more than about 200 feet deep generally yield soft water that is low in iron. Water from shallow wells may vary considerably in quality in response to seasonal precipitation patterns. The chief water-quality problems are salty water, high iron concentrations, high hardness, and dissolved gases.

INTRODUCTION

PURPOSE AND CONTENT

This report provides the necessary information on groundwater (well water) to enable the reader to estimate with reasonable accuracy the casing requirements, potential yield, and quality of water yielded by wells drilled in western Crawford County. It should also help the reader to understand why some wells are better than others nearby, even though they have the same depth. The report can be used as a guide by water managers, well drillers, and homeowners to help choose sites for maximum yield.

The text contains a description of the aquifers (water-yielding rocks), data on depths and yields of wells, and information on the chemical quality of the groundwater, and is accompanied by geologic maps and a well location map.

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The following water-well contractors contributed valuable data on water wells: Berkley D. Bossard, Max Hickernell, Lininger Drilling and Pumps, and Moody Drilling Company, Inc.

LOCATION

Western Crawford County covers about 680 square miles in northwestern Pennsylvania (Figure 1). The area is bordered on the north by Erie County, on the east by eastern Crawford County, on the south by Mercer County, and on the west by Ohio. Meadville, the county seat, is 89 miles north of Pittsburgh and 39 miles south of Erie (Figure 1).

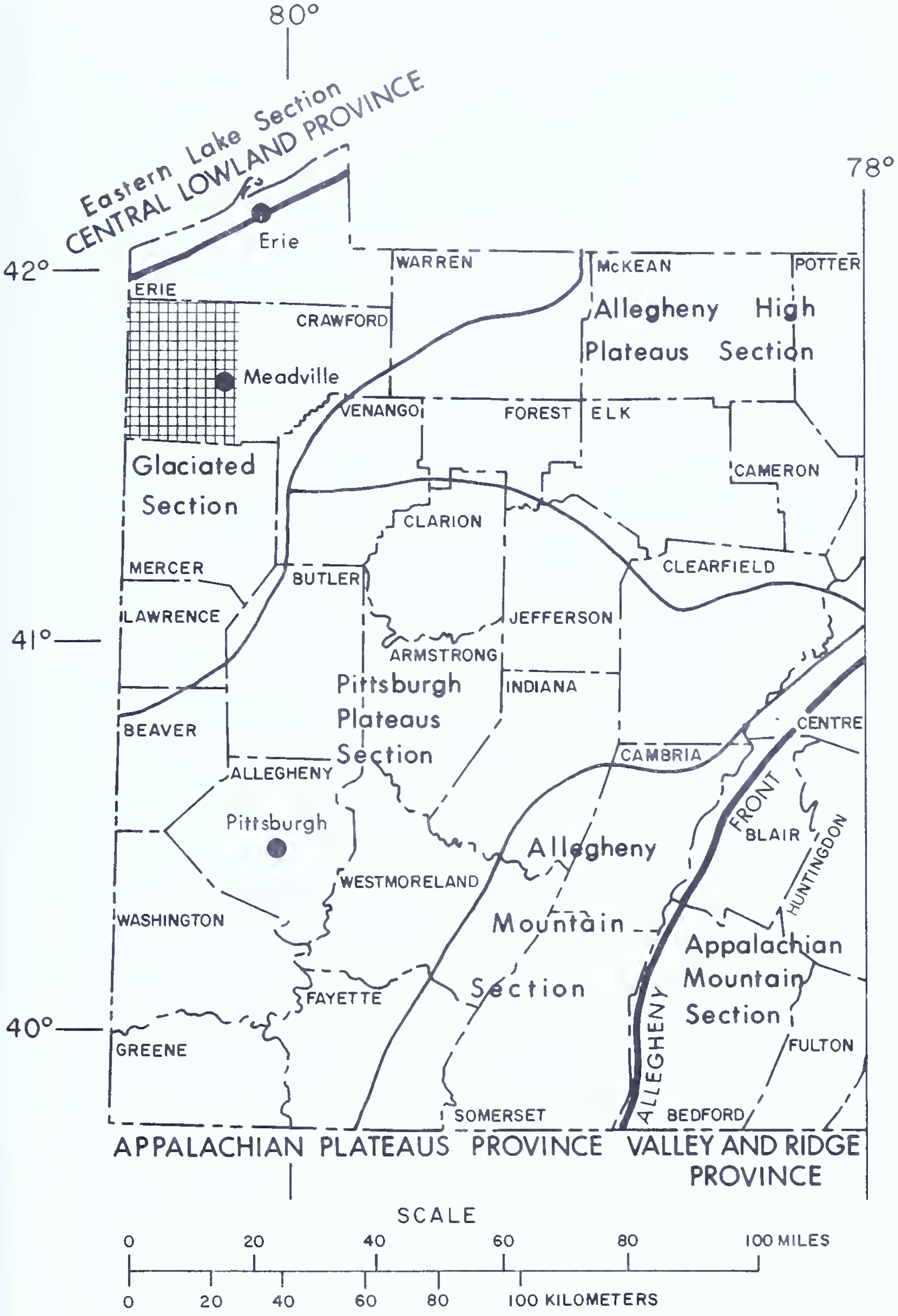

Figure 1. Index map showing the location of western Crawford County.

GROUNDWATER USE

Only groundwater is used for water supply in western Crawford County. Eight major public water-supply systems furnish about 50 percent of the water used in households. The other 50 percent is supplied by private wells. Many industries, mobile home parks, commercial establishments, and some housing developments have separate water systems, which, in total, pump more water than all the private and public supplies combined. In 1974, one company alone, the FMC Corporation, pumped 6 to 7 mgd (million gallons per day), or approximately the amount pumped from all the public-supply and private wells. However, pumpage data for the separate systems are seldom available.

The average amount of water used in 1974 per person was about 100 gpd (gallons per day). An average household can be supplied by a well that is pumped on demand at 3 gpm (gallons per minute). A well yield of 1 gpm may also suffice if adequate storage is available and water is conserved. Two wells that each yield 25 gpm may be adequate to supply 125 homes, assuming a water use estimate of 500 gpd per family, if storage facilities and a dependable standby for emergencies are sufficient.

Data on public-supply facilities are given in the following table.

Public Groundwater Supplies[a]

System	Number of services	Average daily pumpage, in gallons	Number of wells
Conneaut Lake	250	100,000 (summer)	1
Conneaut Lake Park (private)	250	100,000 (summer)	1
Conneautville	360	80,000	3
Linesville	410	140,000 (summer)	4[b]
Meadville	4,853	2,400,000	7
Oakland Beach Water Co. (private)	400	300,000	1
Saegertown	225	200,000	3
Springboro	185	25,000	2

[a] From Crawford County Planning Commission, 1970.

[b] Well supply is augmented by two springs.

PREVIOUS STUDIES

The groundwater resources of Crawford County are described by Leggette (1936), who made a groundwater reconnaissance of northwestern Pennsylvania. An open-file report by Jacob (1949) gives much hydrologic data on wells in the vicinity of Geneva, Pennsylvania. The geology and hydrology of northern Mercer County, which borders Crawford County on the south, are discussed by Schiner and Kimmel (1976).

A report of the Second Pennsylvania Geological Survey by White (1881) contains some detailed information on the bedrock and glacial deposits in the area. Reports on the Cussewago Sandstone, Bedford Shale, and Berea Sandstone by deWitt (1946, 1951), Demarest (1946), and Pepper and others (1954) resolved some of the stratigraphic problems of the lower part of the Mississippian section. Reports by Shepps and others (1959) and White and others (1969) describe the glacial geology of the region. Schiner and Kimmel (1972) describe the Mississippian stratigraphy of northwestern Pennsylvania.

GROUNDWATER

Groundwater is water that moves underground from areas of recharge to areas of discharge. The hydrogeologic framework for both the movement and storage of groundwater must be understood in order to develop and manage the groundwater resource in the best practical way and to estimate amounts of water potentially available.

THE HYDROGEOLOGIC FRAMEWORK

The framework through which groundwater moves and is stored in western Crawford County consists of two general types, the bedrock and the unconsolidated glacial deposits that overlie the bedrock nearly everywhere. Each unit has characteristics and water-bearing properties that determine its utility as a source of supply.

The yields of wells depend upon the ease of the movement of water through the rock and the amount of water the rock can release from storage. The ability of rock material to transmit water is known as its permeability and is related to the amount and degree of interconnection of openings in the rock. Storage of water in rock material is related to the amount of water-filled openings for a given volume of the rock.

Most of the water pumped from wells originated as local precipitation. After the precipitation soaks into the ground it ultimately moves to the several underlying aquifers that are tapped by wells. While it moves through the various rock strata it dissolves minerals and carries them in solution.

Some water tapped by wells is connate (water that was trapped and held in sediments deposited in ancient seas). This water is salty and has many of the characteristics of present-day ocean water.

Many basic hydrologic and geologic relationships are not discussed in this report. Two excellent reports that give this type of information are *Ground Water in Pennsylvania* by Becher (1971) and *A Primer on Ground Water* by Baldwin and McGuinness (1963).

AVAILABILITY OF GROUNDWATER

The general availability of water from wells in western Crawford County is indicated on Plates 1 and 2 and in Tables 1 and 6. The area is a maturely dissected plateau consisting of highlands separated by deep valley drains. Most wells tap bedrock in upland areas and either drift or bedrock in the valleys. Plate 2 indicates by symbol where the drift and bedrock wells are located.

Small to moderate water supplies can be obtained from bedrock wells in most of the highlands in the south. Only meager groundwater supplies are generally obtained in much of the northern part, the major stream valleys, and the deeper tributary valleys. Some valleys, however, contain aquifers capable of yielding several million gallons of water per day. In the northwestern part, salty water commonly occurs at shallow depths, so that it is often difficult to obtain enough potable water even for household use (about 3 gpm). Water supplies in the northwest are generally obtained from shallow wells that tap the weathered top of the bedrock or the glacial deposits if they are thick enough.

Individual well depths and yields depend on complex interrelations of geology and hydrology. The complexity is such that within a 1-acre lot it is possible that wells can range in depth several hundred feet and in yield by hundreds of gallons per minute.

Description of the Unconsolidated Deposits

The unconsolidated deposits consist of varying mixtures of clay, silt, sand, gravel, and boulders which, except for thin recent stream materials, were deposited by several glaciers (ice sheets). Any sediment deposited as a result of glacial activity is termed drift. The material deposited directly by an ice sheet without sorting by water is termed till. It consists of a random mixture of rock material ranging in grain size from clay to boulders. Firm till often is called ‘‘hardpan’’ by local drillers. This same sediment, if sorted by standing or running water from a melting glacier, is termed outwash.

As ice sheets moved southward, they eroded uplands and scoured out valleys. At the same time they plastered variable thicknesses of till on the bedrock in upland areas and in some valleys.

When the ice sheets melted, torrential streams formed and erosion continued. The streams coursed through drainageways and even formed new drainageways when blocked by ice dams. Large lakes were formed in valleys behind ice dams, and overflow from many of these lakes cut channels across the upland drainage divides. The resultant drainage pattern is indicated on the map showing the thickness of glacial deposits (Plate 2).

Therefore, as a result of glacial activity, till generally covers the bedrock in the uplands and outwash is found chiefly in the valleys. The valley out-

Table 1. Summary of Well Data

Geologic unit	*Well depth (feet)*			*Yield (gpm)*			*Specific capacity (gpm/ft)*			*Water level (feet below land surface)*		
	Number of wells	Median	Range	Number of wells	Median	Range	Number of wells	Median	Range	Number of wells	Median	Range
Glacial outwash	428	75	8-286	405	15	0.3-2050	176	1.2	0.03-350	404	16	F-128[1]
Glacial till	27	35	18-130	19	6	1-20	6	.55	.04-1	20	9	F-82
Glacial drift, combined	458	72	8-286	424	15	.3-2050	181	1.2	.03-350	424	15	F-128
Olean Formation	12	64	45-107	12	22	5-50	8	1.8	.44-50	12	23	7-68
Shenango Formation, lower member	104	66	22-155	104	20	2-80	57	1.0	.02-30	101	20	F-78
Meadville Shale	20	72	40-150	19	20	4-50	9	2.0	.09-40	20	15	F-52
Sharpsville Sandstone	293	84	25-246	287	15	.3-120	135	.74	.01-90	279	23	1-160
Orangeville Shale	36	70	18-160	31	6	.1-35	11	.28	.03-1.0	33	14	0-80
Berea Sandstone	153	75	20-196	147	15	3-60	75	.79	.03-30	144	22	F-120
Bedford Shale	11	60	45-91	11	15	3-45	7	.47	.16-11	10	20	4-30
Cussewago Sandstone	526	90	16-574	504	20	.1-130	276	.96	.004-40	506	35	F-300
Mississippian units, combined	1,143	83	16-574	1,103	15	.1-130	570	.83	.004-90	1,093	27	F-300
Conewango Group	728	77	22-695	695	7	0-60	246	.23	.003-20	686	18	F-150
Conneaut Group	22	75	31-344	18	3	.1-25	4	.14	.07-.18	21	15	0-190
Devonian units, combined	750	77	22-695	713	7	0-60	250	.22	.003-20	707	18	F-190
Bedrock, combined	1,893	80	16-695	1,816	12	0-130	820	.60	.003-90	1,800	21	F-300

[1] F, Flowing

wash consists mostly of great thicknesses of lake deposits—chiefly clay, silt, and fine sand. Only a small percentage of valley-fill material is relatively coarse sand and gravel. In places, thick till deposits may be present as part of the valley fill.

Glacial Deposit Aquifers

Glacial deposits are locally the best source of large groundwater supplies. However, in most places they are low-yielding, poorly sorted till that is less than 25 feet thick in the uplands and fine-grained lake deposits interbedded with till that together may be as thick as 500 feet in the large stream valleys (see Plate 2). The major stream valleys also contain some well-sorted glacial deposits capable of yielding large supplies of water.

Yields and depths of drift wells have a considerable range. There are many reports of unsuccessful wells, but there are also a few wells that yield more than 2,000 gpm. Wells range in depth from 8 to 286 feet and have a median depth of 72 feet. A good example of the variability of the depths and yields of wells in drift in a small area is illustrated by the records collected at the south end of Conneaut Lake. Here, wells range in depth from 33 to 261 feet, and yields range from 1 to 600 gpm (Table 6).

In many places considerable thicknesses of drift may be penetrated by wells without yielding an adequate supply, and, as a consequence, the wells are completed in bedrock. Well Cw-1030, for example, was completed in bedrock but passes through 308 feet of drift that apparently yielded little or no water. The well location map indicates which wells are finished in drift and thus in which areas drift is the chief aquifer (Plate 2).

Most of the unsuccessful drift wells are unproductive because only till or lake deposits are penetrated. The few successful wells in till or lake deposits tap thin layers or lenses of well-sorted sand and gravel that occasionally are found within those units. Only 27 (6 percent) of the 458 drift wells inventoried are completed in till. The highest reported yield of wells in till is 20 gpm—the median yield is 6 gpm.

Over 90 percent of the wells completed in drift tap outwash deposits (Table 1). Yields of these wells also vary within wide limits, but their yields are generally higher and more reliable than those of the till wells. However, where the outwash consists of clay, silt, or fine sand (as in most lake deposits), yields are no greater than those from till. Forty-five percent of the wells in outwash yield more than the 20 gpm reported as the highest yield from till. Ninety-eight percent of the outwash wells yield more than 3 gpm, and 19 percent yield at least 25 gpm. The median yield is 15 gpm.

Glacial outwash is the only aquifer capable of supplying more than 130 gpm. Therefore, most large consumers tap it. Except for those wells serving the Borough of Lincsville, all public-supply wells are completed in outwash.

Highly productive outwash aquifers are found in all the major valleys, but mostly in the valleys of French, Cussewago, Conneaut, and Woodcock Creeks, and Conneaut Marsh Outlet. The aquifers generally consist of scattered discontinuous, winding belts of sand and gravel within the valley fill. Much of the high-yielding outwash was deposited in valleys where glacial meltwater streams joined. In other places, coarse outwash was deposited as deltas where meltwater streams entered lakes, as kame terraces along the sides of valley walls, and as fill at some bends of the glacial streams. In many places, the coarse outwash was later covered with lake deposits of silt, clay, and fine sand.

Although the drift in the stream valleys is as thick as 500 feet, the upper part contains most of the more productive sand and gravel aquifers. A comparison of well depths and yields (Table 6) shows that about 90 percent of the valley wells that yield more than 50 gpm are less than 100 feet deep. The deepest valley well that yields more than 50 gpm is 154 feet deep.

Most of the highly productive aquifers are located near the confluence of the major glacial drainageways, which are now large valleys. The aquifer at the juncture of Cussewago and French Creeks (Plate 2) is one of the most productive. It is tapped by the FMC Corporation and the City of Meadville. Well logs indicate the sand and gravel aquifer to be as thick as 75 feet. Most of the aquifer lies below the level of the two rivers, and some of the wells on the banks of the rivers are replenished by infiltration induced from the streams. The FMC Corporation was withdrawing 67 mgd in 1974 from 5 of the 9 wells in service. One well is reported to have been tested at 2,000 gpm and to have a specific capacity of 114 gpm/ft (gallons per minute per foot of drawdown). The City of Meadville pumped 2.8 mgd in 1974 from 7 wells. Well Cw–2048 is reported to have been tested at 1,400 gpm and to have a specific capacity of 350 gpm/ft. The aquifer has supplied about 10 mgd for at least 10 years (1965-1975) without a significant change in pumping levels. Obviously, then, recharge from precipitation and stream infiltration has at least equaled the amount of water withdrawn during the past 10 years. An unpublished report by Moody and Associates, Inc., prepared in 1975, predicts that an additional 1 mgd or more can safely be pumped from the aquifer.

Another excellent outwash aquifer is located in the valley of Conneaut Outlet (Plate 2). Here, seven wells, Cw–180 through Cw–186, were completed as a partial supply for the since-dismantled Keystone Ordnance Works, between Geneva and the Mercer County line (Plate 2). Well logs and test borings indicate the aquifer to be as thick as 65 feet and to extend at least from the vicinity of Geneva to French Creek. Only two of the seven wells, Cw–183 and Cw–184, were in use in 1976. Together they supply about 250,000 gpd of water to three industries and a small housing development. That abundant water is available from the aquifer is documented in a detailed report (Jacob, 1949), which shows that 6.23 mgd was pumped from the well field during a 9-month period. The report also indicates that at least an additional 17 mgd could be obtained from the part of the aquifer that lies at the east end of Conneaut Outlet and along French Creek, just outside of the report area. Some of the hydraulic information concerning the seven wells is given in the table below (Jacob, 1949):

Well number	Transmissivity (ft^2/day)	Storage coefficient	Specific capacity (gpm/ft)	Tested capacity after 3 months intermittent operation (mgd)
Cw-180	7,353	.0006	12.8	1.00
Cw-181	6,684	.0005	14.3	1.01
Cw-182	7,754	.0005	15.8	.88
Cw-183	20,053	.0005	7.6	.94
Cw-184	20,053	—	28	1.08
Cw-185	17,380	—	20	.81
Cw-186	17,380	.0120	21	.51
				6.23

Several other sand and gravel aquifers are known to yield moderate to large supplies of water. Outwash aquifers are tapped by industrial and municipal wells in the vicinities of the Boroughs of Conneaut Lake, Conneautville, Saegertown, and Springboro. Private water systems on the east and west sides of Conneaut Lake and a shopping plaza just south of Meadville also tap outwash. Several companies, such as Meadville Forging Company, in French Creek Valley between Meadville and Saegertown, and the Ohio Rubber Company plant in Conneautville, tap high-yielding outwash. During tests, the shopping plaza well yielded 525 gpm and had a specific capacity of 175 gpm/ft, and the Ohio Rubber Company well (Cw-783) yielded 650 gpm and had a specific capacity of 36 gpm/ft.

A test well (Cw-361) in French Creek Valley 2½ miles south of Meadville was drilled to determine if well-sorted coarse-grained outwash is present in the vicinity of the juncture of glacial meltwater streams. The well penetrated 45 feet of sand and gravel and, when tested at 50 gpm, had a specific capacity of 25 gpm/ft. Wells that yield about 1 mgd can probably be developed there.

Generally, poor continuity of sand and gravel deposits is indicated where wells vary considerably in completion depth, and large supplies cannot be expected. A good example of this situation is in the valley of Conneaut Creek between Harmonsburg and Conneautville, where wells range in depth from 25 to 257 feet (Plate 2). The best areas to explore for large water supplies are those where wells are consistently less than about 75 feet deep. One such area is the east side of Cussewago Creek Valley just northeast of Coons

Corners. Here, wells range in depth from 22 to 51 feet, and yields range from 10 to 20 gpm.

High-yielding glacial outwash deposits are often not easy to find. Test drilling and pumping are necessary to locate production wells that will have high yields. At least 153 test holes were drilled to locate the water supply for the Keystone Ordnance Works.

Description of the Bedrock

Bedrock consists of shale, siltstone, sandstone, and thin, discontinuous beds of limestone. The parent materials of the bedrock were originally deposited as sediments in ancient seas. Eventually, after millions of years, the sediments were changed into beds of solid rock by pressure and cementation. Before the glacial epoch the rocks were lifted above the sea, partly eroded, and gently folded. Today the beds of rock dip to the south 10 to 20 feet per mile and strike generally east-west (Plate 1).

The rock units are grouped into mappable formations on the basis of age, composition, and physical appearance. They are shown on the geologic map (Plate 1). The units vary considerably in composition from place to place, and their assigned name may not be indicative of the local nature of the rock. For example, the Sharpsville Sandstone is mostly sandstone and siltstone (often called "slate" or "sandrock" by drillers) in the southern half of the area, but is mostly shale in the northern part.

The most important controls of the yield of bedrock wells are the physical character and thickness of the rock units penetrated, the amount of fracturing, and the permeability and amount of saturation of the overlying bedrock and drift cover. Each control may change considerably over relatively short distances. Thus, yields of bedrock wells may vary widely in a small area.

Water in rock occurs chiefly in fractures and along bedding planes. Fracture openings are generally widest near the land surface and tend to close with depth due to the weight of overlying rocks. Fractures, or zones of fractures, may be several hundred feet long and deep. They divide the bedrock into many irregularly shaped, solid blocks. Where the rock is shale, the fractures are small and close readily because the shale is soft and plastic. Most sandstone and siltstone, on the other hand, are hard and tightly cemented. They develop clean breaks that remain open after being fractured. As a result, shale aquifers do not yield as much water to wells as sandstone and siltstone aquifers. Some water is found between the grains of a poorly cemented sandstone. Porous sandstone aquifers generally have higher yields than tightly cemented but fractured sandstone and siltstone. In general, the more siltstone and sandstone penetrated by a well, the more water-bearing openings tapped and the greater the yield. However, drilling deeper into shale will generally yield little or no additional water. The relation between well depth and yield is indicated by data on nondomestic wells (usually deep) and domestic wells (relatively shallow). The median depth of nondomestic wells is about 130 feet, but the median of domestic wells is 80 feet. Median yields (20 gpm) and specific capacities (1.5 gpm/ft) of nondomestic wells are about double those of domestic wells.

The permeability of drift may considerably influence yields of the underlying bedrock. Wilson and others (1974) have shown that bedrock usually has substantially higher yields where it is overlain by sand and gravel outwash than where till is the overburden. Well Cw–2249, for example, was reported to yield 50 gpm from Devonian bedrock overlain by outwash, whereas well Cw–1921, ½ mile north, has a till cover overlying Devonian bedrock and yields only 4 gpm. Where the bedrock is shale, yields usually are low regardless of the type of overburden.

Bedrock Aquifers

Bedrock is an important source of water for thousands of households, schools, shops, and other establishments that need small to moderate amounts of water—about three of every four wells are completed in bedrock. Except for wells that tap Devonian rocks, the yields from most bedrock wells are satisfactory in quantity (3 gpm) and quality if the wells are drilled deep enough. Plate 1 and the accompanying explanation indicate the location of each rock unit, its lithology, and water availability.

The formations that are mostly sandstone and siltstone are the most reliable aquifers. The Olean Formation, the lower member of the Shenango Formation, and the Berea Sandstone are sandy enough to yield small to moderate water supplies but are either limited in extent or mostly thin. Consequently, they are not tapped as much as the thicker, areally more extensive units. The Olean Formation and the lower member of the Shenango Formation are tapped mostly in the higher uplands in the south, and the Berea in the southwest.

The Sharpsville Sandstone is an important aquifer in the south, where it contains thick beds of fine-grained sandstone and siltstone. In the north the Sharpsville becomes shaly and yields are small. Specific capacities of 135 wells in the Sharpsville Sandstone range from 0.01 to 90 gpm/ft and have a median value of 0.74 gpm/ft. The median yield of 287 wells is 15 gpm.

The Cussewago Sandstone is the best bedrock aquifer. In places it is the only important source of fresh water. The formation is present in the uplands except in the northwest. Yields from the Cussewago are generally reliable, and water quality is better than that of most other aquifers. It is the lowest geologic unit able to consistently supply fresh water to wells, although locally the upper 40 feet of the Devonian contains fresh water. Because the Cussewago is an important aquifer and salty water is generally present a short distance below it, Plate 3 was compiled on a topographic base to show its extent, thickness, and altitude. The depth to the base of the Cussewago can be estimated from Plate 3 by following the directions in the figure on the right side of the map.

The highest yields from the Cussewago Sandstone are obtained where it is thick and overlain by permeable drift. Outcrop areas shown on Plate 3 indicate where the Cussewago is overlain by drift. Where the Cussewago is uncemented, it is an excellent reservoir. The public-supply well (Cw–154) of the Borough of Linesville benefits from drift cover and absence of cementation. The well penetrates 10 feet of drift and 40 feet of loose Cussewago. Its specific capacity is 20 gpm/ft, about 20 times the median specific capacity of the formation.

The lowest yields from the Cussewago are found where it is thin, well cemented, or overlain by till or more than about 200 feet of shale. (The thickness of the overlying drift and rock cover can be estimated from Plate 3.) In addition, the Cussewago may be less permeable away from outcrop areas due to an increase in cementation. For example, yields are low from the deeply buried Cussewago in the vicinity of Atlantic in the south-central part of the area, even though the formation is thickest there.

Specific capacities of 276 wells in the Cussewago Sandstone range from 0.004 to 40 gpm/ft and have a median value of 0.96 gpm/ft. The median yield of 504 wells is 20 gpm.

The Meadville Shale, Orangeville Shale, and Bedford Shale are, for the most part, poor aquifers that locally yield small to moderate supplies from thin siltstones and sandstones. Only 67 (4 percent) of the 1,893 bedrock wells inventoried are completed in these units, although they underlie large areas.

The rock of Devonian age is mostly shale and is often a poor aquifer. In many places the best yield of a half dozen wells drilled on a 1-acre lot is only 1 to 2 gpm. The formation, however, is important as an aquifer because it is the only bedrock found in many places, especially in the north and beneath the major stream valleys and the deeper tributary valleys.

The Devonian contains salty water everywhere. Where the overlying drift is thin, salty water is usually present at depths of less than about 60 feet. In these places small yields are obtained from shallow wells tapping the weathered top of the rock. Where the Devonian is overlain by rock more than 50 to 75 feet thick, the unit commonly contains salty water.

Specific capacities of 250 wells in the Devonian range from 0.003 to 20 gpm/ft and have a median value of 0.22 gpm/ft. The median yield of 713 wells is 7 gpm (Table 1).

Estimate of Highest Probable Bedrock Yields

Precise predictions of bedrock yields cannot be made because of the extreme variability of the conditions that control yield. Nevertheless, general estimates of highest probable well yields can be made and should be useful for planning purposes.

The approach used for estimating optimum yields is a modification of a method used by Nutter (1974) that is based on specific capacities. In this report, for bedrock units having at least 100 values, the 80 percent cumulative frequency of their specific-capacity value is selected to represent the potential specific capacity, if well sites are selected using existing geologic and hydrologic data. Where fewer than 100 specific capacities are available, the median specific capacity is selected as a representation of wells having better than average yields. The specific capacity obtained is then reduced by a factor of 50 percent to compensate for short duration tests commonly used to obtain most specific-capacity data. This adjusted specific capacity is then multiplied by an assumed practical drawdown, ranging from 25 to 100 feet, to obtain optimum yield values. The table below lists the estimated optimum yields of bedrock aquifers.

Bedrock unit	Specific capacity x .5 x drawdown	Yield (gpm)
Olean Formation	(1.8 x .50 x 25)	22
Shenango Formation, lower member	(1.0 x .50 x 50)	25
Meadville Shale	(2.0 x .50 x 75)	75
Sharpsville Sandstone	(2.3 x .50 x 100)	115
Orangeville Shale	(0.3 x .50 x 100)	15
Berea Sandstone	(0.8 x .50 x 100)	40
Bedford Shale	(.47 x .50 x 100)	24
Cussewago Sandstone	(3.0 x .50 x 100)	150
Conewango Group	(0.8 x .50 x 100)	40
Conneaut Group	(.14 x .50 x 100)	7

The above table indicates that deep wells that penetrate several aquifers could have substantial yields. However, the geology is complex, and where one aquifer is good, others at the same location are often low yielding. For example, in areas where the Cussewago Sandstone is a good aquifer because it is thick and porous, the overlying Sharpsville Sandstone may be shaly and yield little. Conversely, where the Sharpsville is a good aquifer, the Cussewago is generally thin, well cemented, or poorly fractured, and is low yielding. Thus, wells that penetrate several aquifers often produce from only one.

RECHARGE

One of the most important factors to consider in the location of well sites is the availability of recharge (infiltrating surface water or groundwater).

Recharge from rainfall and snowmelt moves directly into aquifers where they form the land surface or indirectly into them where they are buried. The rate of recharge is controlled by the rate the aquifer transmits water from the intake areas and by the permeability of overlying units. Unfavorable recharge conditions exist where aquifers are covered by thick, relatively impermeable strata, such as lake deposits, till, or shale. Favorable conditions exist where the topography is relatively wide and flat and covered with sand or gravel, or where the bedrock is broken near the surface. The thicker and more permeable the sand and gravel, the more advantageous is the site for groundwater development.

WATER LEVELS

The natural water level in a well is an indicator of the amount of water stored in an aquifer at any one time. Fluctuations of water levels reflect the balance between the input (recharge) and the removal (discharge) of water by natural flow or pumping. More water can be pumped from a well when water levels are high than when the levels are low.

Water levels reflect precipitation patterns and the growing season. Levels generally are highest in spring and fall and lowest during the summer and winter seasons. However, thaws during the winter and sustained rainfall during the summer can temporarily reverse this general pattern. Data from observation well Cw–413, in the western part of the area, indicate no long-term downward trend of water levels.

Levels range between wide limits—from above land surface in flowing wells to 300 feet below the land surface (Table 1). Water levels are related to head in the water-bearing zones, the amount of casing, and the topographic position of the well. The median depth to water is 21 feet in bedrock wells and 15 feet in drift wells (Table 1).

Because of the hydraulics involved in water movement, water levels decline as well depths increase in recharge areas and rise as depths increase in the discharge areas. The uplands are recharge areas and valleys are discharge areas. Deep wells in valleys generally flow; an example is well Cw–1770 (Table 6). In the uplands water levels in wells of the same depth are lowest in the wells that have the most casing, because shallow water-contributing zones that would have raised the water level are sealed off. A good example of water-level decline in progressively deeper wells in the uplands is the vicinity of Atlantic, where wells Cw–68, Cw–62, and Cw–57—302, 342, and 453 feet deep—have water levels of 153, 236, and 300 feet, respectively.

Many deep bedrock wells in the uplands have unexpectedly high water levels. These levels occur because the wells tap only shallow water-bearing zones and are, in effect, shallow wells that store water in the lower part of the well bore.

Water levels fluctuate less in the drift than in the bedrock because the storage capacity of drift is greater. Also, levels fluctuate more on hilltops than in valleys in both bedrock and drift wells.

SPECIFIC CAPACITIES AND WELL YIELDS

The specific capacity of a well is the amount of water in gallons per minute that may be pumped from the well for each foot that the water level is lowered. It is used to estimate the rate at which a well can be pumped for any given drawdown. An estimate of drawdown may become less accurate for a higher pumping rate because the increased turbulence of water entering a well at higher velocities causes an increase in drawdown. Nevertheless, specific-capacity data are more useful and accurate indexes of the capacity of a well to produce water than are the commonly reported yield figures because they take into account the drawdowns caused by pumping. Both specific capacity and yield decrease as time of pumping increases. Also, both values decrease if the water level drops below a yielding zone or if a yielding zone is dewatered.

Specific capacity is related not only to the duration and rate of pumping, but also to well diameter. A screened well finished in drift may show an increase in specific capacity of about 4 percent if the well diameter is enlarged from 6 to 8 inches. The relation between well diameter and specific capacity in bedrock is less definite, but available information indicates a slight to moderate increase in specific capacity with an increase in well diameter.

Specific-capacity and yield data are given in Table 1. The information can be used as a general guide in assessing the productivity of the aquifers. It should be emphasized that the data are based mostly on drillers' reports of pumping rate, drawdown, and test duration. Their tests are made under nonstandardized conditions.

Computed specific capacities of the bedrock aquifers have a wide range although the aquifer's thickness is constant, because of differences in depth of penetration, variations in the number, size, and degree of interconnection of fractures and pore spaces, and the use of test data of differing duration and pumping rate.

Most drillers' reports of specific capacity are based on low pumping rates and short duration tests. Results of controlled specific-capacity tests, however, based on high pumping rates and long pumping periods under standardized conditions, indicate that specific capacities determined from drillers' tests may be two to three times too high. Therefore, the median specific capacities shown in Table 1 are probably representative of wells having better than average yields. Realistic specific capacities of the aquifers are probably about one half to one third of those shown as the median in the table. For example, the median specific capacity of 0.74 gpm/ft for the Sharpsville Sandstone multiplied by 50 feet of available drawdown indicates a potential yield of about 35 gpm—about the expected yield of a good well in the Sharpsville based on yield reports for this aquifer. If the specific capacity of 0.74 gpm were reduced by two thirds, the average predicted yield for the Sharpsville would be about 12 gpm—approximately the median yield of the formation as shown in Table 1.

Most of the high-range specific-capacity values shown in Table 1 probably indicate the short-term yields of extraordinarily good wells—most likely for pumping periods of less than one-half hour. Potential yields of wells, based on these specific-capacity values, would be excessively high.

Specific capacities and yields of bedrock wells are often related to topography. Yields are least for wells on hills, larger for wells on slopes, and largest for wells in valleys. Yields of wells in valleys are generally higher than those on the uplands because (1) till generally caps the bedrock on the uplands and more permeable outwash covers the bedrock in valleys, (2) valleys may be an expression of a fracture zone, (3) water levels are higher and fluctuate less in valleys and have more available drawdown, and (4) valley streams may be a source of recharge.

FRACTURE TRACES

Fracture traces are natural linear features consisting of topographic, vegetal, or soil tonal alignments visible primarily on aerial photographs and expressed continuously for less than one mile (Lattman, 1958). They often appear on the land surface as shallow, straight-line depressions and may be found in any topographic situation. Parizek and others (1971) reported that in Illinois fracture traces are detectable through drift 150 feet thick. Fracture traces are believed to be the surface expression of concentrations of fractures in the bedrock; where the fractures are not concentrated the traces may be discontinuous. Field evidence indicates that the fractures associated with traces are nearly vertical in attitude (Blanchet, 1957).

Fracture traces in strongly folded rocks do not correspond with exposed joints (Parizek and others, 1971); therefore, the traces may be related to regional tectonics and not to the folding. Features termed lineaments are similar to fracture traces but are more than about 1 mile in length (Lattman, 1958). They are reported to be an expression of more deeply seated tectonic movements.

As most wells are completed in bedrock and water moves through fractures, the locations of the fracture traces and lineaments can help in choosing sites for optimum yield. The most conspicuous fracture traces were identified and plotted on 1:20,000-scale aerial photographs using the unaided eye or a stereoscope. The trace plots were then transferred to the

1:50,000-scale topographic map (Plate 1). Time did not permit a field check of trace locations.

The best site for a well is at the intersection of two or more traces. Because the width of traces is generally small, much care must be taken to locate them accurately in the field. Parizek and others (1971) found that the width of fracture zones ranged from 15 to 60 feet and averaged 39 feet in the siltstone and shale bedrock of northeastern Pennsylvania. Where the bedrock consists of siltstone and sandstone, better than average yields are obtained. According to Lattman (personal communication, 1974) locating a well on a fracture trace in shale probably does not increase yield.

GUIDES FOR DEVELOPING GROUNDWATER SUPPLIES

The individual homeowner generally has little choice in the selection of a well site. Usually the well must be installed close to the residence and the only consideration given to location is the prevention of possible contamination. However, an understanding of the geologic and hydrologic information given in this report, combined with proper well construction, usually can make the difference between a successful and unsuccessful well. The following pertinent facts should be kept in mind when individual well systems are installed.

1. The depths, yields, quality of water, and type of well construction of nearby wells is often indicative of what can be expected.
2. Wells installed and tested during dry periods, when water levels are lowest, permit the optimum setting of pumps. Also, the adequacy of the well is best tested at that time and the quality of water commonly at its worst.
3. Where wells yield meager supplies of water, as much reservoir capacity as possible is desirable. Storage tanks or reservoirs may be used to provide necessary storage. Consideration should be given to larger diameter or deeper wells than usual to provide as much storage capacity as possible in the well itself. Care must be taken not to extend a well into the saltwater zone. Each foot of water in a 6-inch-diameter well represents about 1½ gallons. Each foot of water in an 8-inch-diameter well represents about 2½ gallons. Thus, wells that contain 50 feet of water have 75 gallons in storage in a 6-inch-diameter well and 125 gallons in an 8-inch-diameter well. The cost of drilling a well that is more than 8 inches in diameter may become prohibitive below a certain depth. The cost of well storage must be equated with that of ground-level reservoirs.
4. Where water supplies must be developed from poorly permeable drift, consideration should be given to the installation of very large diameter dug or bored wells to maximize reservoir capacity. Each foot of water in a well 3 feet in diameter represents 53 gallons of water. For

example, 6 feet of stored water amounts to about 300 gallons. Randall and others (1966) report that till can provide enough water from a dug well to supply a family of three. Extreme care must be taken to prevent pollution.

5. Where yields from the bedrock are small and the overlying drift is saturated, well casing should preferably be seated loosely into the top of the rock and slotted at the bottom in order to allow as much inflow to the well as possible from the drift. Care must be taken to avoid pollution.
6. The use of well screens should be considered where the drift is thick but only fine-grained deposits can be tapped.
7. Shallow aquifers that contain poor-quality water can be sealed off by installation of sufficient well casing and cementing the zone of poor quality. A reduction in yield may have to be compensated for by drilling deeper or installing surface storage.

A good reference source of general information on the development of small well-supply systems is the manual prepared by the U. S. Environmental Protection Agency entitled *Manual of Individual Water Supply Systems.* The publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402, for a nominal fee.

WHERE TO GET INFORMATION ABOUT WATER

A variety of information on water supplies is available from the several government agencies listed below. When requesting information, it is important to give an accurate location of the site in which you are interested.

The Pennsylvania Topographic and Geologic Survey has information on the geology. Drillers' logs and reports on recently drilled wells are also available from this agency.

The office of the Division of Water Quality, Bureau of Water Quality Management, Pennsylvania Department of Environmental Resources, can supply information on proper well construction requirements, biological reports on well water, and the chemical quality of groundwater. The Department, through various regional offices, tests water samples for bacterial pollution; it also can advise effective corrective measures when pollution is reported. The nearest regional office and testing laboratory is in Meadville.

The Division of Comprehensive Resources Programming, Bureau of Resources Programming, Pennsylvania Department of Environmental Resources, has information on stream discharges, flood data, reservoir requirements, and power plant discharge.

The Public Utility Commission, Bureau of Rates and Research, has information on some municipal water supplies, including source, average daily use, total annual use, and estimated future needs.

The U. S. Geological Survey has data on wells, springs, and streams, and on the chemical quality of water.

Local well drillers and pump installers can provide prices and suggest the type of equipment needed to develop a water supply. They can also suggest the proper well diameter for the necessary pumping equipment. Pump installers can supply information concerning the size of the pump, depth of the pump setting, and the pressure-tank capacity.

If chemical analysis of the well water indicates treatment is necessary, commercial water-treatment companies can provide the necessary information and equipment. Equipment for water treatment can be purchased or rented, and it will be serviced by the supplier if desired.

WATER QUALITY

TYPES OF WATER

The evaluation of the quality of water is based on 255 chemical analyses. Table 2 shows the results of 112 laboratory tests from 88 wells made by the U. S. Geological Survey, Pennsylvania State agencies, and private analysts. The results of 141 field analyses made by U. S. Geological Survey personnel are shown in two tables: hardness, specific conductance, and pH are included in Table 6, and iron and chloride concentrations are given in Table 3. Table 4 summarizes important quality characteristics, showing ranges and median values according to general aquifer types. The tables list only the principal aquifer, though in many instances the water may be a mixture from several aquifers.

Some wells were sampled several times to determine the seasonal or long-term quality changes. Also, selected wells were sampled at progressively deeper intervals to relate changes in mineralization and chloride concentration to depth.

Three basic types of water are found in the area: calcium bicarbonate, sodium bicarbonate, and sodium chloride. The most common is the hard, calcium bicarbonate type found in wells that tap drift, Mississippian formations within 200 feet of land surface, and Devonian shales and siltstones within 50 feet of land surface. Sodium bicarbonate type water is softer and is obtained from Mississippian aquifers that lie deeper than 200 feet. The sodium chloride water is connate. It is found where the marine deposits have not been flushed by fresh water. Saline water is mostly associated with Devonian formations; however, the Lower Mississippian in the southeast may also be salty. The sodium chloride concentration usually increases rapidly with depth in wells penetrating more than about 50 feet of these units.

Estimates of dissolved-solids and chloride concentrations can be obtained easily and inexpensively by measuring an electrical property of the water

Table 2. *Laboratory Analyses of Groundwater*

(Results in milligrams per liter except specific conductance)

Aquifer: Qt, Glacial till; Qo, Glacial outwash; Msh, Sharpsville Sandstone; Mo, Orangeville Shale; Mbe, Berea Sandstone; Mcu, Cussewago Sandstone; Dco, Conewango Group; Dct, Conneaut Group

Analyst: Pa, Pennsylvania Department of Health or Department of Environmental Resources; Pvt, private testing laboratory; Qw, U.S. Geological Survey

Well number	Analyst	Aquifer	Date of collection	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Sum of dissolved solids	Hardness, as $CaCO_3$		Specific conductance (micromhos per centimeter at 25°C)
																	Calcium-magnesium	Non-carbonate	
Cw- 3	Qw	Qo	9-20-71	12	0.70	0.04	38	9.5	55	2.2	155	31	71	0.4	0.18	298	130	7	520
	Pa	Qo	10-18-72	—	.11	.00	—	—	59	—	161	42	29	.25	.13	308	130	—	—
6	Pa	Dco	10-19-72	—	.19	.00	—	—	70	—	376	34	50	.52	.08	462	118	—	—
12	Pa	Dco	10-19-72	—	.39	.03	—	—	105	—	334	29	2	.50	.19	374	92	—	—
57	Qw	Mcu	9-16-71	12	.05	.03	11	5.1	88	2.1	265	.0	24	.3	.11	274	48	0	458
67	Qw	Mcu	9-17-71	.3	.07	.03	9.8	4.3	94	1.8	232	.4	42	.5	.04	277	42	0	491
88	Qw	Qo	10- 2-28	17	.16	—	29	7.6	24	1.9	153	11	12	—	.08	178	100	0	—
96	Qw	Qo	10- 2-28	12	1.31	—	22	6.3	57	2.3	152	12	48	—	.16	237	81	0	—
106	Pa	Dco	10-18-72	—	1.9	.00	—	—	115	—	278	51	2	.95	.17	—	30	—	—
110	Pa	Qo	10-18-72	—	.57	.28	—	—	6	—	261	58	2	.20	—	374	200	—	—
114	Pa	Qo	- -46	—	.30	.10	—	—	—	—	244	—	5	—	—	—	240	—	—
	Qw	Qo	8-10-71	14	.01	.01	60	20	10	1.3	222	61	8	.3	.06	284	230	50	466
120	Pa	Dco	10-20-72	—	.09	.13	—	—	8	—	236	72	2	.23	.07	264	186	—	—
151	Pa	Dco	10-18-72	—	.18	.00	—	—	13	—	149	51	3	.95	.07	188	128	—	—
154	Pa	Qo	10-20-72	—	.13	.00	—	—	15	—	254	32	7	.24	.13	236	160	—	—
157	Pa	Dco	10-20-72	—	.38	.06	—	—	9	—	275	24	3	.28	.09	280	246	—	—
159	Pa	Dco	10-20-72	—	.09	.00	—	—	22	—	244	72	11	.39	.14	220	160	—	—
175	Qw	Mo	10- 2-28	16	.42	—	26	8.2	1.5	—	154	5.1	2.3	—	.08	136	99	0	—

Table 2. (Continued)

Well number	Analyst	Aquifer	Date of collection	Silica (SiO2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO3)	Sulfate (SO4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO3)	Sum of dissolved solids	Hardness, as CaCO3 Calcium-magnesium	Hardness, as CaCO3 Non-carbonate	Specific conductance (micromhos per centimeter at 25°C)
Cw- 283	Pa	Qo	10-20-72	—	.26	.10	—	—	8	—	197	27	14	.29	.07	218	204	—	—
296	Qw	Mcu	9-27-71	15	.04	.02	45	11	13	2.8	195	13	2.5	.6	.15	200	160	0	326
330	Pvt	Mbe	7- 8-53	—	.45	.00	—	—	—	—	237	25	4	—	—	345	138	—	—
	Qw	Mbe	5-26-54	14	1.3	0	44	11	60	4.1	327	22	4.4	2.0	.45	327	160	0	533
331	Qw	Mcu	6-20-66	13	.07	.02	10	3.1	106	2.0	268	12	19	.5	.34	299	38	0	493
361	Qw	Qo	1-22-70	13	1.0	.08	49	11	9.3	1.1	216	15	3.7	.2	.00	210	170	0	357
413	Qw	Mcu	6-28-67	14	.19	0	50	14	21	2.4	252	6.2	3.1	.2	.52	238	180	0	411
526	Qw	Qo	9-14-71	12	.16	.09	42	12	15	1.2	199	11	3.8	.4	.00	196	150	0	312
661	Qw	Mcu	8-15-71	10	.90	.08	53	13	8.7	1.4	175	35	10	.4	.04	219	190	42	355
677	Pa	Qo	10-19-72	—	1.0	.00	—	—	54	—	339	8	8	.31	—	352	134	—	—
	Pa	Qo	6-14-73	—	.93	.02	—	—	—	—	294	6	14	—	—	—	118	—	900
680	Pa	Dco	10-19-72	—	.50	.00	—	—	43	—	271	24	4	.35	.14	226	110	—	—
681	Pa	Dco	10-19-72	—	.05	.00	—	—	86	—	232	32	25	.50	—	292	72	—	—
686	Pa	Dco	10-19-72	—	.35	.70	—	—	10	—	178	47	2	.20	.09	276	160	—	—
688	Pa	Dco	10-18-72	—	.04	.00	—	—	170	—	402	11	7	1.4	.19	452	160	—	—
751	Pa	Qo	10-19-72	—	.15	.00	—	—	122	—	176	8	75	.34	.06	346	—	—	—
767	Pa	Dco	10-19-72	—	.14	.02	—	—	12	—	173	46	38	.22	.09	240	184	—	—
768	Pa	Mcu	10-19-72	—	.12	.00	—	—	22	—	205	17	0	.33	.19	216	142	—	—
779	Pa	Mcu	10-19-72	—	.04	.00	—	—	76	—	215	40	7	.46	.17	236	150	—	—
793	Pa	Mcu	10-19-72	—	.00	.00	—	—	—	—	141	52	7	.14	.33	178	148	—	—
795	Pa	Qo	10-19-72	—	.32	.06	—	—	5	—	161	39	0	.25	.09	224	126	—	—
895	Qw	Mcu	8-24-71	10	.01	0	9.0	2.7	130	2.8	374	9.3	8.9	.5	.04	358	34	0	587
902	Pvt	Mcu	12- 4-70	—	.28	.13	—	—	—	—	200	12	8	.10	.68	—	132	—	389
1145	Pa	Qo	6-10-70	—	—	—	—	—	—	—	151	9	20	—	—	324	264	—	—
1216	Pa	Qo	10-19-72	—	.54	.14	—	—	2	—	122	44	.0	.24	.09	208	116	—	—
1236	Qw	Mcu	9-10-71	15	.11	.16	40	9.8	8.2	1.8	181	12	1.4	.6	.09	179	140	0	292
1334	Qw	Msh	9-13-71	15	1.2	.03	46	14	18	4.6	215	21	1.7	.3	.95	232	170	0	370

	Pa	Mcu	10-20-72	—	1.11	.05	—	—	5	—	202	22	1	.22	.07	246	126	—	—
1413	Pa	Qo	10-19-72	—	.42	.00	—	—	24	—	237	0	1	.23	.24	212	156	—	—
1420	Pa	Mbe	10-19-72	—	4.5	.00	—	—	7	—	80	32	.0	.30	.07	100	64	—	—
1564	Pa	Mcu	10-19-72	—	.00	.03	—	—	8	—	146	52	25	.27	.09	276	184	—	—
1567	Pa	Qo	10-19-72	—	.14	.22	—	—	4	—	173	46	1	.17	.07	164	1.46	—	—
1584	Pa	Mcu	9-15-46	—	—	—	—	—	—	—	105	—	7	—	.90	—	64	—	—
1590	Pa	Qo	10-20-72	—	.14	.00	—	—	11	—	312	52	4	.19	.10	360	184	—	—
1594	Pa	Mcu	- -	—	—	—	—	—	—	—	116	—	6	.68	—	—	60	—	—
1594	Qw	Mcu	7-26-71	9.0	.04	.01	38	11	6.2	1.0	90	39	11	.4	5.0	182	140	66	296
1677	Pa	Qo	10-19-72	—	.03	.00	—	—	4	—	156	52	2	.12	.19	168	162	—	—
1705	Qw	Dco	9-10-71	17	.11	.12	38	7.5	7.5	1.6	145	13	5.7	.4	.00	162	130	7	258
1795	Pa	Mcu	10-19-72	—	.10	.03	—	—	9	—	268	47	.0	.20	.07	262	200	—	—
1845	Pa	Dco	10-19-72	—	.10	.04	—	—	626	—	385	5	93	1.8	.07	1598	62	—	—
1883	Pa	Mbe	10-20-72	—	.26	.03	—	—	14	—	249	43	1	.21	.32	272	186	—	—
1889	Pa	Qo	10-20-72	—	.57	.00	—	—	75	—	173	10	3	.20	.11	214	128	—	—
1895	Pa	Dco	10-19-72	—	.72	.05	—	—	89	—	202	48	76	.42	.07	426	134	—	—
1898	Pa	Dco	10-20-72	—	.32	.00	—	—	50	—	297	25	1	.45	.16	244	130	—	—
1911	Pa	Dct	10-20-72	—	.24	.00	—	—	18	—	193	32	1	.33	.16	180	118	—	—
1913	Pa	Dco	6-18-73	—	.35	.04	—	—	—	—	299	12	13	—	—	—	154	—	575
1915	Pa	Dco	6-18-73	—	.67	.03	—	—	—	—	445	11	1000	—	—	—	128	—	3400
1936	Pa	Dct	6-20-73	—	2.17	.26	—	—	—	—	381	66	54	—	—	—	366	—	—
1937	Pa	Dco	6-20-73	—	.60	.06	—	—	—	—	346	71	—	—	—	—	196	—	720
1939	Pa	Dco	10-20-72	—	1.93	.01	—	—	30	—	239	21	15	.26	.08	284	156	—	—
1943	Pa	Dco	10-19-72	—	.28	.01	—	—	24	—	359	99	12	.22	.18	378	218	—	—
1955	Pa	Dco	10-19-72	—	.33	.01	—	—	73	—	349	11	15	.33	.09	352	112	—	—
1960	Pa	Dco	6-14-73	—	.06	.02	—	—	—	—	259	55	355	—	—	—	188	—	—
1967	Pa	Dct	10-19-72	—	.24	.01	—	—	170	—	246	8	154	.70	—	316	76	—	—
2038	Pvt	Qo	6-20-73	—	.10	.05	—	—	13	—	294	48	1.8	.10	—	—	262	—	109
2043	Pa	Qo	8-18-72	—	—	.10	—	—	—	—	163	23	13	—	.02	129	157	—	—
2045	Qw	Mbe	7-22-29	—	—	—	32	—	—	—	264	10	4.4	—	.00	241	152	0	—
2046	Qw	Qo	8-17-71	12	.19	.08	42	9.5	14	1.2	163	19	8.5	.4	.07	187	140	10	302
2047	Qw	Qo	9- 4-71	13	.03	.01	80	13	27	1.6	221	46	61	.3	.45	353	250	72	568
2048	Pa	Qo	9- 8-47	—	.10	.30	—	—	—	—	195	—	4	—	—	—	208	—	—
2051	Qw	Qo	8-23-71	11	.02	.02	60	12	14	1.7	194	44	15	.6	.02	254	200	40	408
2056	Pa	Qo	6-19-60	—	2.4	—	—	—	—	—	146	—	11	—	.16	—	—		—
	Pa	Qo	7-10-63	—	.10	—	—	—	—	—	—	—	—	—	.07	205	—	—	—
	Pa	Qo	9- 7-66	—	.10	—	—	—	—	—	104	—	5	—	.18	112	—		—
	Qw	Qo	7-28-71	8.7	.02	0	43	12	17	3.2	147	42	29	.3	.00	228	160	36	409
2057	Pa	Qo	9- 6-68	—	.10	—	—	—	—	—	85	17	8	—	.34	60	—		—
	Pa	Qo	9- 7-68	—	.10	—	—	—	—	—	104	—	5	.10	.18	112	—	—	
2058	Qw	Qo	9-25-28	13	.17	—	45	8.7	3.5	1.0	125	39	3.6	—	2.1	185	150	46	
2059	Pa	Qo	11- 7-45	—	.60	.10	—	—	—	—	226	—	6	—	—	280	—	—	—
	Pa	Qo	12-17-46	—	.40	—	—	—	—	—	232	—	6	—	—	260	—	—	—
	Pa	Qo	8-10-64	—	1.0	—	—	—	—	—	315	—	24	—	—	258	—	—	
	Qw	Qo	8-11-71	12	.03	.01	59	19	11	1.2	184	66	15	3.0	.00	277	230	75	418

Table 2. *(Continued)*

Well number	Analyst	Aquifer	Date of collection	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Sum of dissolved solids	Hardness, as $CaCO_3$ Calcium-magnesium	Hardness, as $CaCO_3$ Non-carbonate	Specific conductance (micromhos per centimeter at 25°C)
Cw-2100	Pa	Qo	7-15-60	—	.40	—	—	—	—	—	68	—	3	—	—	—	94	—	—
	Pa	Qo	12- 1-60	—	.80	—	—	—	—	—	207	—	5	—	—	—	16	—	—
	Pa	Qo	4-27-60	—	—	—	—	—	—	—	166	—	8	—	—	—	130	—	—
	Pa	Qo	6-29-64	—	.20	—	—	—	—	—	—	—	7	—	—	—	136	—	—
	Pa	Qo	9- 4-64	—	.60	—	—	—	—	—	—	—	11	—	—	—	198	—	—
2104	Pa	Qo	12-22-66	—	.00	.00	—	—	—	—	217	—	—	.00	.14	234	174	—	—
2239	Pa	Qo	6-18-73	—	.50	.02	—	—	—	—	355	—	4	—	—	—	56	—	2100
2267	Pa	Qo	12-17-42	—	.30	—	—	—	—	—	—	—	—	—	—	—	224	—	—
	Pa	Qo	6-17-57	—	.40	—	—	—	—	—	256	—	—	—	—	—	345	—	—
	Pa	Qo	8- 6-62	—	2.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2277	Pa	Qo	6-18-73	—	.35	.06	—	—	—	—	447	—	19	—	—	—	188	—	850
2356	Pvt	Mcu	5-27-70	—	.38	.00	59	—	—	—	293	4	1	—	.14	326	212	—	—
2357	Pvt	Mcu	9-13-68	—	.01	.02	—	—	—	—	—	—	—	—	—	303	256	—	—
	Qw	Msh	8-21-74	19	.04	.04	84	20	19	4.3	354	13	26	.2	—	360	290	2	740
	Qw	Mcu	8-21-74	18	1.3	.09	84	21	12	4.4	353	14	9.4	.2	—	338	300	7	680
	Qw	Dco	8-21-74	—	—	—	—	—	—	—	—	—	560	—	—	—	—	—	2100
	Qw	Dco	8-21-74	16	.04	.04	110	23	2000	12	3340	53	2500	.0	—	6360	370	0	9900
2358	Pvt	Mcu	9-18-68	—	.04	.03	—	—	—	—	—	—	9.7	—	—	310	132	—	—
9000	Qw	Dco	8-21-74	—	—	—	—	—	—	—	—	—	10000	—	—	18100	—	—	26600
	Qw	Dco	8-21-74	—	—	—	—	—	—	—	—	—	26000	—	—	45700	—	—	64700
	Qw	Dct	8-21-74	5.1	1.1	4.7	400	1200	22000	72	59	73	44000	.7	—	77500	5900	—	90600
Limits recommended by U.S. Public Health Service					0.3	0.05						250	250	1.3([a])	45	500			

[a] For area of this report.

Table 3. *Field Analyses of Groundwater*

(Hardness, specific conductance, and pH determinations are shown in Table 2)

Aquifer code: Qt, Glacial till; Qo, glacial outwash; Msl, Shenango Formation, lower member; Mm, Meadville Shale; Msh, Sharpsville Sandstone; Mo, Orangeville Shale; Mbe, Berea Sandstone; Mbd, Bedford Shale; Mcu, Cussewago Sandstone; Dco, Conewango Group; Dct, Conneaut Group.

Well number	Aquifer	Date of analysis	Iron (Fe) (mg/l)	Chloride (Cl) (mg/l)	Remarks
Cw- 4	Dco	8/ 2/74	1.3	15	After pumping, iron decreased from 3.0 mg/l.
10	Msl	9/19/73	.35	30	—
12	Dco	8/ 2/74	.60	15	—
42	Msl	9/19/73	.05	10	—
62	Mcu	11/10/72	.04	20	—
67	Mcu	9/17/71	.05	26	Pump set at 300 feet.
74	Mcu	11/10/72	.02	15	Slight H_2S odor.
74	Mcu	6/23/73	.03	6	Pumping level 75 feet.
82	Mo	9/ 8/73	1.3	10	H_2S odor.
91	Dco	—	—	45	—
101	Dco	7/16/73	—	15	—
118	Dco	8/30/73	1.0	20	—
128	Dco	9/ 6/73	.14	55	—
132	Dco	9/11/73	.06	5	—
139	Qo	7/17/73	—	15	—
140	Qo	7/17/73	—	15	—
146	Qo	7/16/73	—	5	—
148	Qo	8/ 6/73	—	20	—
167	Qo	9/10/73	.35	5	—
169	Dco	7/18/73	—	5	—
171	Dco	7/16/73	—	20	—
176	Dco	8/17/73	—	20	—
265	Mm	9/19/73	2.3	30	—
313	Msl	9/19/73	.05	270	—
346	Qo	9/20/73	.50	5	—

Well number	Aquifer	Date of analysis	Iron (Fe) (mg/l)	Chloride (Cl) (mg/l)	Remarks
Cw- 350	Msl	9/20/73	2.5	5	—
379	Mm	9/20/73	1.0	10	—
399	Mo	9/18/73	.45	5	—
431	Mcu	9/11/73	1.9	5	Iron bacteria present.
532	Mbd	9/20/73	5.0	25	H_2S odor; iron bacteria present.
535	Mcu	9/11/73	.22	15	—
606	Mbe	9/ 3/73	1.0	10	—
659	Dco	9/18/73	2.8	5	—
673	Dco	8/ 9/73	—	35	—
674	Dco	8/17/73	—	25	—
677	Qt	8/14/73	—	75	—
682	Qt	8/10/73	—	15	—
686	Dco	10/19/72	—	10	—
688	Dco	8/16/73	—	20	—
689	Dco	7/17/73	—	5	—
695	Mcu	9/17/73	.65	45	H_2S odor.
751	Qo	8/22/73	.45	130	—
764	Mcu	8/ 6/73	—	12	—
767	Dco	8/22/73	.20	45	—
812	Mcu	9/11/73	1.5	5	—
849	Dco	9/ 8/73	3.0	10	—
992	Qo	10/ 6/72	.55	65	—
1049	Dco	9/20/73	.02	125	—
1050	Dco	9/20/73	.10	1250	—
1059	Mcu	11/10/72	.09	5	—
1075	Mo	8/ 2/74	.50	10	—
1076	Mcu	11/10/72	.17	10	Slight H_2S odor.

1076	Mcu	8/31/73	.15	15	No odor.
1076	Mcu	8/ 2/74	.24	20	No odor.
1236	Mcu	9/10/71	.33	—	—
1237	Dco	3/23/73	—	1300	—
1353	Mcu	8/16/71	.10	10	—
1386	Mm	9/13/73	.16	15	—
1423	Dco	9/21/71	.23	410	—
1517	Dco	8/27/73	.60	5	—
1539	Mcu	9/10/73	1.0	—	Slight natural gas odor.
1553	Dco	5/29/74	.35	1725	—
1553	Dco	8/ 5/74	.15	960	—
1553	Mcu	11/16/75	—	40	—
1553	Mcu	11/16/75	—	100	—
1583	Dco	9/19/73	.51	10	—
1606	Dco	8/10/73	—	20	—
1608	Dco	8/ 9/73	—	10	—
1620	Dco	9/10/73	.14	10	—
1678	Mcu	8/24/73	1.1	5	—
1679	Mcu	8/24/73	.25	10	—
1720	Mcu	9/ 7/73	1.4	15	Iron bacteria present.
1794	Qo	8/22/73	.45	10	—
1904	Dco	8/17/73	1.3	5	—
1913	Dco	6/18/73	—	5	—
1918	Dco	9/ 8/73	.55	35	—
1921	Dco	7/16/73	—	30	—
1925	Dco	8/ 8/73	—	30	—
1926	Dco	8/15/73	—	35	—
1936	Dct	6/20/73	—	55	—
1937	Dco	6/20/73	—	20	—
1958	Dco	8/ 9/73	—	250	—
1961	Dco	7/16/73	—	200	—
1978	Mcu	9/ 3/73	.65	15	—

Well number	Aquifer	Date of analysis	Iron (Fe) (mg/l)	Chloride (Cl) (mg/l)	Remarks
Cw– 2000	Dco	9/ 3/73	—	30	—
2005	Dco	9/ 3/73	7.0	45	—
2006	Dco	9/ 3/73	1.2	5	—
2032	Qo	8/22/73	1.1	5	—
2064	Mcu	9/14/73	.15	55	Well also supplies natural gas.
2076	Msh	9/20/73	.15	20	—
2097	Dco	8/30/72	.20	10	Strong H_2S odor.
2149	Qo	8/27/73	.75	5	—
2159	Dco	11/30/72	0	70	—
2184	Qo	8/15/73	4.0	—	—
2185	Qo	8/16/73	.10	24	—
2193	Dco	8/23/73	.60	10	—
2194	Qo	8/29/73	.01	20	—
2196	Qo	8/15/73	.50	45	—
2218	Mbe	8/28/73	1.3	15	Slight H_2S odor.
2223	Qt	8/20/73	.45	15	—
2224	Dco	8/17/73	—	15	—
2225	Qt	8/16/73	.30	20	—
2237	Qt	8/31/73	.35	45	—
2239	Dco	8/30/73	—	220	—
2240	Mo	9/ 8/73	1.1	10	—
2245	Dco	3/15/74	.36	10	—
2252	Dco	6/18/73	—	240	—
2253	Dco	6/18/73	—	340	H_2S odor.
2262	Dco	8/ 9/73	.01	35	—
2265	Dco	8/14/73	—	10	—
2266	Qo	8/14/73	—	12	—
2270	—	6/17/73	—	5	—

2271	Dco	8/20/74	—	28	—
2271	Dco	8/20/74	—	30	—
2271	Dco	8/20/74	—	425	—
2271	Dct	8/20/74	—	600	—
2271	Dct	8/20/74	—	2575	—
2272	Qt	6/18/73	.50	35	—
2273	Qt	7/19/73	—	25	—
2276	—	8/14/73	—	75	—
2278	Dco	6/18/73	—	75	—
2281	—	7/18/73	—	115	—
2282	—	7/18/73	—	15	—
2284	Dco	8/ 8/73	—	15	—
2285	—	7/18/73	—	15	—
2286	Qt	7/19/73	—	35	—
2287	Dct	8/21/73	6.0	1125	—
2288	Msh	8/31/72	.15	10	—
2289	Qt	7/18/73	—	80	—
2356	Msh	8/21/74	—	5	—
2356	Dco	8/21/74	—	1250	—
2356	Dco	8/21/74	—	4050	—

Table 4. *Summary of Selected Water-Quality Characteristics*

	Well depth (feet)			Iron (Fe) (milligrams per liter)			Manganese (Mn) (milligrams per liter)			Chloride (milligrams per liter)			Hardness as CaCO3 (grains per gallon)			Specific conductance (micromhos per cm at 25°C)		
Geologic unit	Number of wells	Median	Range	Number of analyses	Median	Range	Number of analyses	Median	Range	Number of analyses	Median	Range	Number of analyses	Median	Range	Number of analyses	Median	Range
Glacial till	10	20.5	18-40	7	0.45	0.17-1.0	—	—	—	12	22.5	8-80	5	10.5	8-21	11	750	500-1000
Glacial outwash	51	72	8-257	59	.30	.0 -5.0	29	0.02	0-0.03	65	8	1-130	67	9	1-20	30	483	109-1000
Glacial, total	61	71	8-257	66	.33	.0 -5.0	29	.02	0- .03	77	11	1-130	72	10	1-21	41	500	109-1000
Cussewago Sandstone	39	103	36-494	42	.15	.0 -1.9	21	.03	0- .70	43	10	0-55	45	8	2-18	36	425	280-680
Mississippian, except Cussewago Sandstone	26	72.5	18-129	27	.45	.02-5.0	5	.0	0- .03	28	10	0-270	28	9	1-26	23	500	117-1200
Mississippian, total	65	96	18-494	69	.34	.0 -5.0	26	.03	0- .70	71	10	0-270	73	8	1-26	59	450	117-1200
Conewango Group	81	60	22-695	53	.35	.0 -38	26	.02	0- .70	83	25	1-4500	71	8	1-37	65	650	258-13000
Conneaut Group	8	98	31-148	5	.24	.10-6.0	3	.01	0- .26	8	45.0	1-7000	6	6	1-25	5	4000	2200-7000
Devonian, total	89	63	22-695	58	.36	.0 -38	29	.02	0- .70	91	27.5	1-7000	77	8	1-37	70	700	258-13000

called specific conductance. Specific conductance is the measure of the capacity of water to conduct an electric current. It varies with the concentration of dissolved mineral matter, the degree of ionization of the material, and the temperature of the water, and is reported in micromhos per centimeter at 25°C. Figures 2 and 3 show, respectively, the relationship between specific conductance and chloride concentration and between specific conductance and dissolved-solids concentration. Data from western Crawford County and nearby areas were used. In less mineralized water, chloride is not a major element and conductance is related to other constituents. At the left side, or low-range end, of Figure 2 the change in slope of the graph indicates this change in composition in the ratio of conductance to chloride concentration.

The classification of saline water (Figure 3) is based on dissolved-solids concentration. The terminology of Krieger and others (1957) has been modified by placing the division between "fresh" and "slightly saline" water at 500 mg/l (milligrams per liter), rather than the 1,000 mg/l generally

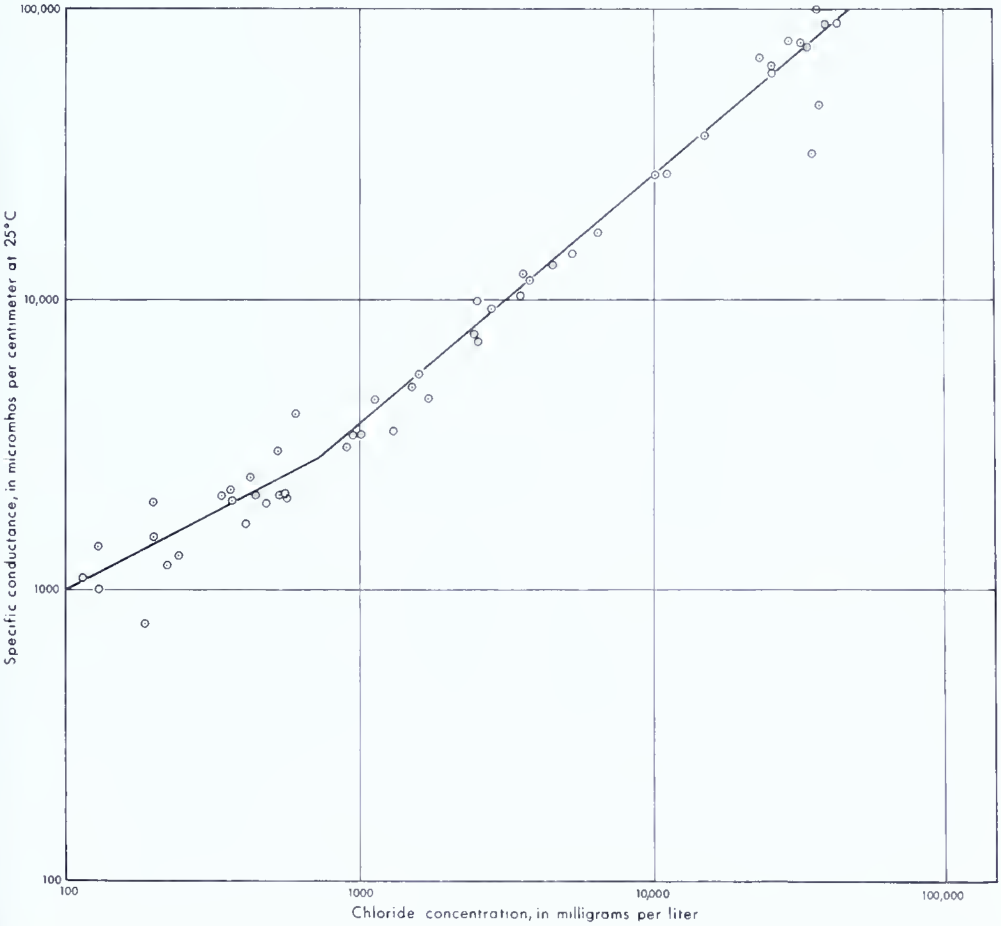

Figure 2. Graph showing the relation between chloride concentration and specific conductance.

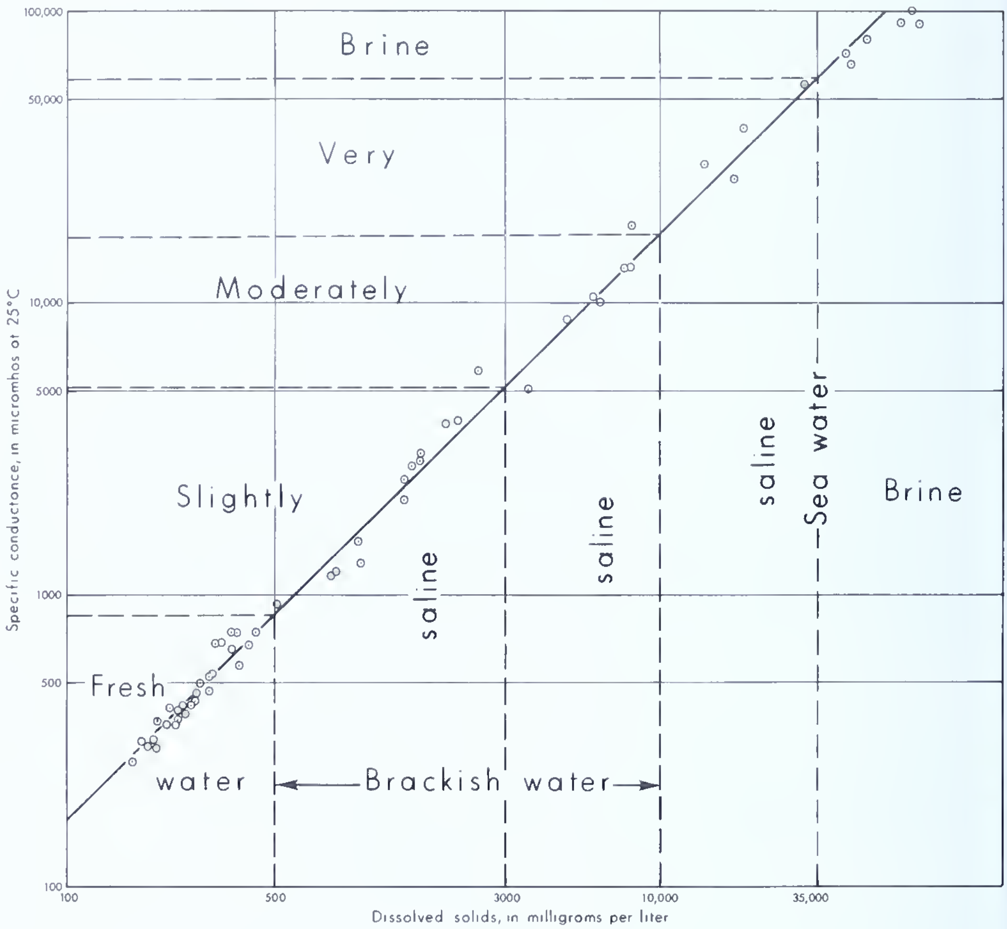

Figure 3. Graph showing the relation between specific conductance and dissolved solids, and the classification of salinity of water.

used by the U. S. Geological Survey. This adjustment has been made to conform with local usage.

SALT WATER

Saline water is present at varying depths beneath the entire area. Salinity increases with depth and is a function of flushing out of the connate water by fresh water. Water movement is very slow in the Devonian rocks, and except for upland areas near the major valleys, little flushing has occurred below the Mississippian.

Most saline-water problems occur where the freshwater-bearing Mississippian formations are absent and yields from drift are poor. Wells must then be drilled into incompletely flushed bedrock, but at the same time care must be taken to avoid the zone of excess chloride.

Data on highly saline wells are scarce because these wells are either destroyed or plugged back to prevent the entry of salty water. Additionally, well drillers familiar with the situation are careful to avoid drilling into the saline water.

Special instruments were used to measure conductance and take samples from wells Cw–2271, 2356, 2357, and 9000. The technique allowed the sampling of water from specific zones within the wells without contamination from other zones. Figure 4 shows a geophysical log of well Cw–2356.

Salinity is shown as chloride concentration in Tables 2 and 3 and, indirectly, as specific conductance in Tables 6 and 2 and as dissolved solids in Table 2. Selected data from these tables are shown in Table 5.

The conditions indicated by the data in Table 5 for well Cw–2271 near Beaver Center are common in the northern third of the county. Except for small patches of Mississippian rocks in the uplands, the area consists mostly of low-yielding drift that rests on shallowly flushed Devonian shales and siltstones. Wells deeper than about 50 feet generally yield salty water and the salinity increases with depth. Similar conditions exist in western Pine and southwestern Conneaut Townships because Mississippian rocks are absent and the drift is generally impermeable. Wells penetrating the underlying Devonian bedrock may yield excessively saline water.

At wells Cw–2356 and 2357, 2.7 and 4.5 miles west of Meadville, respectively, the Devonian rocks are overlain by freshwater Mississippian aquifers. The geophysical logs and chemical data in Table 5 for these wells indicate saline conditions below the freshwater-saltwater interface that are similar to those at well Cw–2271. From a practical point of view, however, there is a great difference. In Cw–2356 and 2357 the upper, freshwater aquifers contribute most of the water and therefore dilute the small amount of highly saline water from the Devonian rocks. This is indicated by the low chloride concentrations of the composite samples taken from the wells.

Well Cw–9000 is an abandoned oil well 3 miles southeast of Conneaut Lake Borough. Water analyses from this well are included in Tables 2 and 5 to show the extreme salinity and overall mineralization that may be expected from water in the deeper Devonian units.

Topography also exerts an influence on the salinity of the rocks, both by its effect on drift thickness and on depth of freshwater circulation. In the major stream valleys the drift may be several hundred feet thick but so impermeable that it yields little or no water. The underlying bedrock is Devonian in age, and toward the center of the valleys it lies below the zone of circulating fresh water.

Well Cw–1423, about 2 miles northwest of Meadville, is situated just below the valley wall. Here, as shown in Table 5, saline water is pumped from unflushed Devonian rocks. In the upland areas adjacent to the valley wall, however, the Devonian rocks are often flushed and generally yield fresh wa-

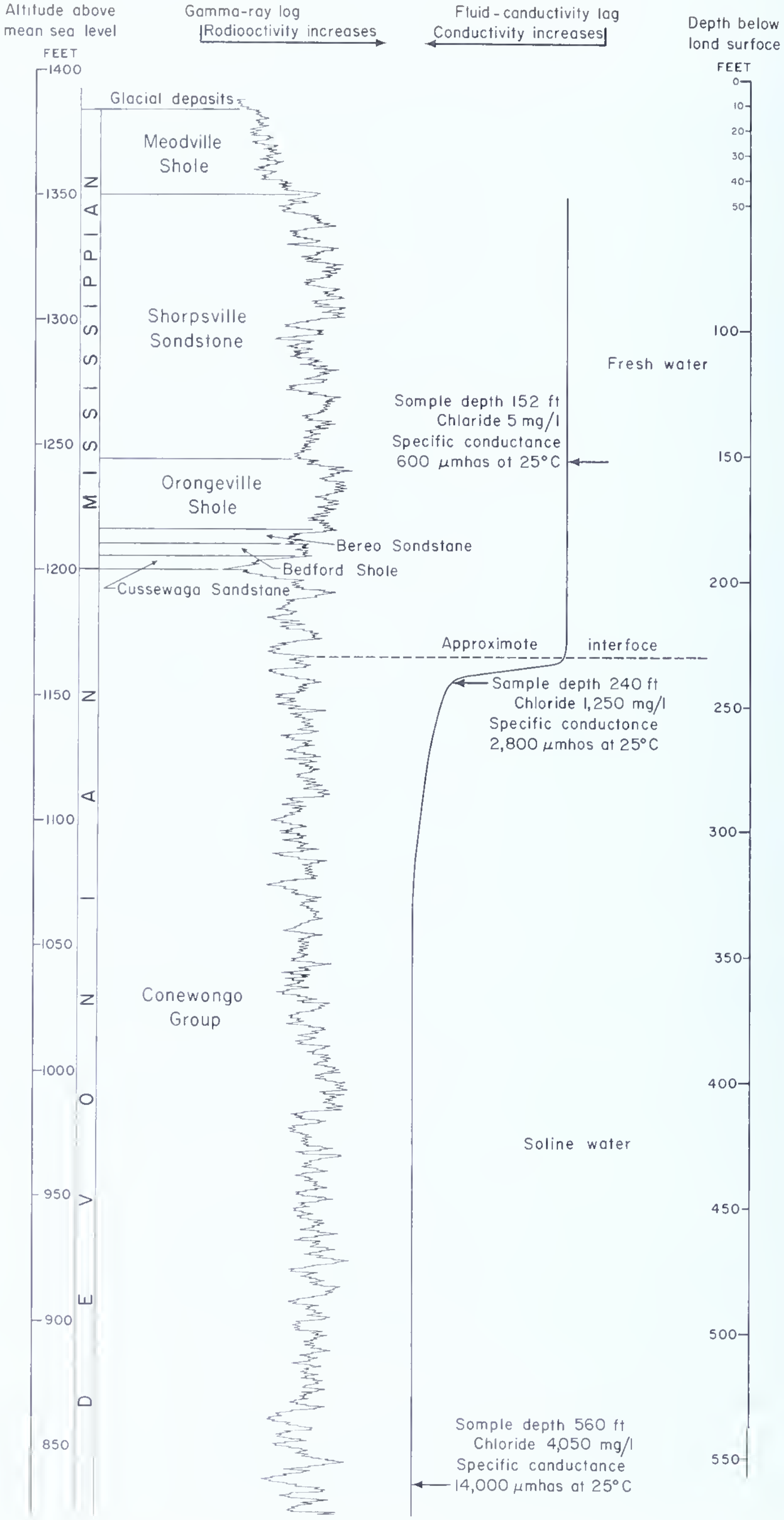

Figure 4. Fluid-conductivity and gamma-ray logs of well Cw-2356, showing the approximate freshwater-saline water interface.

Table 5. *Selected Well Data, Showing Saline Characteristics of Water in Unflushed Aquifers*

Aquifer: Msl, Shenango Formation, lower member;
Msh, Sharpsville Sandstone;
Mcu, Cussewago Sandstone;
Dco, Conewango Group;
Dct, Conneaut Group.

Well	Total depth (feet)	Depth to bedrock (feet)	Aquifers sampled	Depth of sample (feet)	Depth of sample below top of Devonian (feet)	Chloride (mg/l)	Specific conductance (micromhos per cm at 25°C)	Remarks
Cw- 313	70	13	Msl	e68	—	270	1200	—
1049	134	93	Dco	e130	e37	125	400	—
1050	215	80	Dco	e210	e130	1250	5000	In buried valley.
1237	158	119	Dco	e155	e36	1300	3500	—
1423	140	28	Dco	e135	e107	410	1690	In major stream valley
1553	120	16	Dco, Mcu	118	38	1725	4500	Deepened.
	100		Dco, Mcu	98	18	960	3400	Plugged back.
	80		Mcu	78	—	40	360	Plugged back; sampled after 10 minutes pumping.
	80		Mcu	78	—	100	650	Sampled after 35 minutes pumping.
2271	155	18	Dco	26	8	28	750	—
			Dco	50	32	30	800	—
			Dco	68	50	425	2400	—
			Dct	100	82	600	4000	—
			Dct	148	130	2575	7000	—
2356	574	12	Mcu	—	—	1	—	Composite sample.
			Msh	152	—	e20	600	—
			Dco	240	40	e700	2800	—
			Dco	560	360	e4100	12400	—
2357	368	9	Mcu	—	—	e20	e520	Composite sample.
			Msh	90	—	e20	740	—
			Mcu	150	—	e20	680	—
			Dco	228	88	e400	2100	—
			Dco	360	220	e3200	9900	—
9000	800	27	Dco	200	173	10000	26600	Abandoned oil well.
			Dco	500	473	26000	64700	—
			Dct	800	773	44000	90600	—

e — estimated

ter. In the Kerrtown-Fredericksburg area, immediately west of Meadville, well Cw–1273 and many others in the uplands near the valley wall penetrate more than 100 feet into the same Devonian units tapped by Cw–1423, but they yield fresh water.

In buried valleys, as near Cw–1049, 1050, and 1237 on the east side of Conneaut Lake, saline water conditions may exist. In this area the Mississippian rocks are absent and the drift filling the old channel is a poor aquifer. Wells that penetrate the underlying Devonian to obtain greater yields may produce water containing 1,000 mg/l or more chloride, as shown in Table 5.

Although most of the saline water tested or reported is from Devonian aquifers, rocks of the Lower Mississippian Cuyahoga Group in the southeast are relatively impermeable and poorly flushed. Well Cw–313, about 3 miles southeast of Geneva, yielded water of excessive saline concentration. Owners of nearby wells of similar depth also reported salty water.

Well depth and the amount of fresh water available to dilute salty water are very critical factors where saltwater problems exist. In the northern townships, for example, the combination of low yields and shallow salty water makes it difficult to get a good well. Storage of water in the drift/Devonian wells usually is needed and is created by extending the borehole a short distance into the shale. In such areas the water from the drift should not be cased off, as it is needed to augment the well yield and to dilute any saline water entering from the underlying bedrock. Water from the drift can enter a well through slotted casing or around the bottom of casing driven loosely into the bedrock.

Wells that yield excessively saline water are usually destroyed. However, in instances where groundwater supplies are difficult to obtain and a modest amount of fresh water may be obtained from the upper part of the well, it may be more economical to plug the well so as to seal off the lower, saline zone instead of abandoning the well. This technique was used at well Cw–1553 in the Harmonsburg area, and the results are shown in Table 5. Originally 48 feet deep, the well was deepened to 120 feet to obtain more water. At the greater depth, the well penetrated 40 feet into Devonian shale, and although the yield increased, the water then contained 1,725 mg/l of chloride. When plugged back to 100 feet, it still yielded water that was too salty. At its present depth of 80 feet, the bottom of the well is at the base of a thin remnant of the Cussewago Sandstone and the chloride is within tolerable levels. It should be noted that, during the 35-minute period of pumping and sampling, the chloride concentration began to increase sharply as the water was drawn down close to the level of the pump intake.

HARDNESS

Hardness depends primarily upon the concentration of calcium and magnesium in the water. It affects the lathering properties of soap, causes scale to form in pipes and boilers, and may leave a curd on bathtubs and wash basins.

Hardness is expressed either in milligrams per liter or grains per gallon (gpg) of calcium carbonate. Water from 0 to 60 mg/l (0 to 3.5 gpg) is considered soft, 61 to 120 mg/l (3.5 to 7.0 gpg) is moderately hard, 121 to 180 mg/l (7 to 10.5 gpg) is hard, and more than 180 mg/l (10.5 gpg) is very hard.

Water in the county ranges from soft to very hard, but the median is hard. Drift that is rich in calcium and magnesium minerals generally yields harder water than that from bedrock aquifers. However, because water from the drift also percolates downward, it contributes to the hardness of water in the underlying bedrock.

Water moving through shale units is modified from a calcium bicarbonate to a sodium bicarbonate type by a natural ion-exchange process not unlike that which takes place in a home water-softening unit. Water in the deeper freshwater aquifers has been in contact with the shales longer than that in the shallower aquifers and so is usually softer.

The Cussewago Sandstone, as the deepest, consistently freshwater aquifer in the area, benefits most from this slow downward percolation of water through overlying shale. The median hardness of water from all wells in this sandstone is 8 gpg (137 mg/l); in wells less than 200 feet deep the median hardness is 9 gpg (154 mg/l); in deeper wells the median is only 3 gpg (51 mg/l).

IRON AND MANGANESE

Iron is dissolved from many soil and rock components. Upon exposure to the air the dissolved iron is oxidized and redeposited as a reddish to dark-brown stain. The Environmental Protection Agency (1975) recommends that iron concentrations do not exceed 0.3 mg/l. Although greater amounts are not necessarily harmful to health, they may impart objectionable taste to the water and stain clothing, utensils, and plumbing fixtures.

Iron concentrations range widely and are affected by the geology at the well site and by the construction of the well. Within each of the broad aquifer groupings used in Table 4, the amount of iron in the water generally decreases with increased depths of wells. In the Mississippian aquifers, for example, wells less than 200 feet had a median iron concentration of 0.45 mg/l; in deeper wells, the median was 0.04 mg/l.

Above-average amounts of iron-rich minerals are found in the Orangeville Shale and locally in the drift. The high-iron water from these units may contaminate better water in lower aquifers, either by downward percolation into the lower units or by entry through shallowly cased, multi-aquifer wells.

Under some conditions the iron problem may be complicated by the presence of iron bacteria. This bacterial growth forms a slimy, rust-colored mass which builds up on plumbing-fixture surfaces and may clog water pipes. Chlorine bleach may be introduced into the water system to control this growth.

The sources and effects of manganese concentrations are very similar to those of iron. Manganese concentration should not exceed 0.05 mg/l.

HYDROGEN SULFIDE

Hydrogen sulfide (H_2S) is a gas that has the odor of rotten eggs and is formed by the decomposition of sulfide minerals. The gas may cause black staining of utensils and plumbing fixtures. It may be dispelled by allowing the water to sit in an open container at room temperature or, if the concentration is not too great, it may be eliminated by running the water through an iron-removal filter. The instances of reported hydrogen sulfide gas are few, and usually the gas causes minor, nonpersistent problems.

SEASONAL QUALITY VARIATIONS

The water quality in many shallow wells and in some deep multi-aquifer wells varies markedly with changes in the water table, commonly of a seasonal nature. When the water table is high and both an upper and a lower zone are contributing to well discharge, the water pumped is a mixture from both zones. When the water table is low, as is common during the fall, only the lower zone contributes.

In the project area, water from the upper zone is typically less mineralized and more desirable than that contributed by the deep zone. When the water table is relatively high, the upper water dilutes the more mineralized contribution of the lower unit. When the table is depressed, only the lower, more mineralized water enters the well to be available for use.

The opposite situation results where the relative quality of water from the upper and lower zones is reversed. During times of a high water table similar dilution is expected, but during dry periods the upper (poorer quality) source would dry up and only the lower, less mineralized water would be pumped. When more than two zones contribute water to a well the situation becomes more complex but comparable effects are to be expected, according to the variables involved.

Many wells were sampled several times to relate changes in the concentration of certain constituents to the seasonal changes in water levels. Well Cw–677, drilled 20 feet in drift in the northern part of the county, was one of those sampled. Over a 10-month period the chloride changed from 8 mg/l on October 19, 1972 to 14 mg/l on June 14, 1973, and to 75 mg/l on August 14, 1973. In November 1973 the chloride decreased to 10 mg/l. Hardness of water showed a similar change, ranging from an average of 126 mg/l during the periods of high water levels to 290 mg/l when water levels were low.

A similar change in water quality occurs in some industrial wells drilled in 80 feet of alluvium along French Creek north of Meadville. During periods of high groundwater levels the hardness ranges from 100 to 200 mg/l. During the summer, when the water table is low, the hardness ranges from 500 to 799 mg/l.

There is little seasonal variation in the quality of water from the aquifers below 200 feet. The water levels are very stable, and water movement is so slow and complex, both vertically and laterally, that any zones where mixing occurs are near the surface.

SUMMARY OF QUALITY CHARACTERISTICS

Most of the aquifers yield water of satisfactory quality. Common exceptions are the drift, which locally contains water high in iron, and Devonian bedrock, which yields salty water at shallow depths. Other complaints about water quality concern high hardness and the smell of hydrogen sulfide (rotten egg odor).

The Lower Mississippian units, especially the Sharpsville and Cussewago Sandstones, generally yield the best groundwater in the area. Where these aquifers lie at depths of 200 feet or more below land surface, the water is more consistent in quality, is softer, and is lower in iron than that from the same units at shallower depths.

Basic information concerning water quality may be obtained from the pamphlet, *A Primer on Water Quality,* which is available at no cost from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402. The report also covers aspects of water quality not considered here.

GEOLOGY

GENERAL BEDROCK FEATURES

The bedrock geology is shown on Plate 1. Rocks of Devonian age underlie most of the north and the large stream valleys. Rocks of Mississippian age underlie the uplands and smaller valleys in the south and those of Pennsylvanian age cap the higher parts of the uplands in the southern and east-central parts of the area.

STRATIGRAPHY

Devonian System

The Upper Devonian bedrock consists of the Conneaut (Caster, 1934) and Conewango Groups (Butts, 1910), which have a combined thickness of about 1,100 feet. About 550 feet is exposed.

Conneaut Group

The Conneaut Group is the oldest bedrock exposed in the area and consists of dark-greenish-gray shale interbedded with greenish-gray siltstone and shaly fine-grained sandstone. Invertebrate fossils are common in the upper part. Its thickness is uncertain but a study of geophysical logs indicates that the unit may be as much as 650 feet thick. This thickness is consistent with that reported for the group by White (1881) for Erie County. Only about 100 feet of the uppermost Conneaut crops out—mostly in poor exposures along the valley walls of Conneaut Creek between Springboro and the Erie County line (Plate 1).

The Conneaut lies directly on rocks of the Canadaway Group. The nature of the contact is not known in Crawford County, but is reported to be transitional in Erie County (Tomikel and Shepps, 1967).

The upper boundary of the Conneaut Group is at the base of the LeBoeuf Sandstone Member of the Cattaraugus Formation (LeBoeuf Conglomerate of White, 1881), the lowermost sandstone unit of the Conewango Group.

The contact is sharp where the LeBoeuf Sandstone Member is distinctive, as in the south, but it becomes transitional northward.

Conewango Group

The Conewango Group in northwestern Pennsylvania can generally be divided into an upper shale unit called the Riceville Shale (White, 1881) and a lower series of sandstones and shales called the Cattaraugus Formation (Gray and others, 1960). In western Crawford County, however, the Conewango Group is not subdivided because the Woodcock Sandstone Member of the Cattaraugus Formation (White, 1881) (First Venango sand of drillers), which defines the top of the Cattaraugus, is not present. Only the LeBoeuf Sandstone Member of the Cattaraugus (Third Venango sand of drillers) is locally mappable. Discontinuous beds of thin sandstone and siltstone occur locally at stratigraphic positions that correspond closely to sandstone units of the Cattaraugus that are identifiable south and east of the area.

The Conewango Group consists mostly of interbeds of light-greenish-gray to light-bluish-gray shale and siltstone containing some purplish-red shale and thin layers of very fine grained, yellowish-brown to greenish-gray sandstone. The bottom 100 feet of the Conewango is often sandy in the south.

The LeBoeuf Sandstone Member of the Cattaraugus Formation, which forms the base of the Conewango Group, consists of a white to gray or greenish-gray, fine- to medium-grained sandstone that ranges in thickness from 20 to 45 feet. It is mostly massive and sandy in the south, but thins and becomes shaly northward. Where the LeBoeuf is thick and sandy, it locally yields oil and gas.

The Conewango Group is about 420 feet thick in the south, but it thins northward to about 385 feet. Erosion has partially removed the Conewango in the northwest and in the deep valleys. A gamma-ray log of about 375 feet of the Conewango is shown in Figure 4.

The contact of the Conewango with the overlying Mississippian is conformable.

Mississippian System

In ascending order the Mississippian System consists of the Cussewago Sandstone, Bedford Shale, Berea Sandstone (and the stratigraphic equivalent of the Bedford and Berea, the Shellhammer Hollow Formation), the Cuyahoga Group (Orangeville Shale, Sharpsville Sandstone, and Meadville Shale), and the lower and upper members of the Shenango Formation (Plate 1). It consists chiefly of alternating units of shale, siltstone, and sandstone and has a maximum thickness of about 480 feet. These rocks are unconformably overlain by shales, sandstones, and conglomerates of Pennsylvanian age or by unconsolidated deposits of Pleistocene or Holocene age. The Mississippian rocks strike northeastward and dip southward about 20 to 40 feet per mile (see Plate 1). Mississippian rocks generally occupy the highland areas and are commonly the upper bedrock formation in all but the northwest and north-central part of the area and the deep valleys. The gamma-ray log in Figure 4 shows the Mississippian from the base to the Meadville Shale.

Cussewago Sandstone

Where it is more than about 50 feet thick, the Cussewago Sandstone may be divided into two parts. The upper part is a micaceous, well-indurated, very fine to fine-grained, thin-bedded sandstone that contains interbeds of siltstone and shale and is generally covered with ripple marks. Drillers seldom record this interval as sandstone but include it with the overlying Bedford Shale, so that in many places the Cussewago is thicker than indicated on well logs. The lower part of the Cussewago is a poorly indurated, fine- to coarse-grained, dominantly massive sandstone that may contain very coarse sand or pebbles of quartz or chert near the base. In places, the massive sandstone exhibits steep-angle crossbedding. In contrast to the younger Mississippian and Pennsylvanian sandstones, which are generally well indurated, the lower unit is often porous. Also, the characteristically dark-greenish-yellow Cussewago contrasts sharply with the light- to dark-gray overlying and underlying rocks. Demarest (1946) mapped the Cussewago Sandstone as a large lobate delta that spread over western Pennsylvania and northeastern Ohio from a southeastern source area. The extent, structure, and thickness of the Cussewago, determined from surface and subsurface data, are shown on Plate 3. The thickness lines indicate a north-south axis for the delta locally, and a maximum thickness of about 80 feet. It thins rapidly eastward. In places where the Cussewago is less than about 10 feet thick, it is highly indurated.

The contact between the Cussewago and the overlying Bedford Shale is gradational in most places, but may be sharp, as where the Shellhammer Hollow Formation caps the Cussewago.

Bedford Shale

The Bedford Shale consists of thin beds of dark-gray silty shale, ripple-marked siltstone, and very fine grained sandstone. The Bedford thins eastward from the Pennsylvania-Ohio line and grades laterally into the Shellhammer Hollow Formation in the east-central part of the report area. Its maximum thickness is about 40 feet. The upper contact of the Bedford with the Berea Sandstone is conformable.

Berea Sandstone

The Berea Sandstone in western Crawford County is a siltstone facies of the much thicker and coarser Berea Sandstone of northern Ohio (Pepper and others, 1954). In addition to the thin, lenticular beds of hard siltstone, it contains some beds of shale and scattered thin beds of very fine grained sandstone. The sandstones and siltstones are often ripple marked and calcareous and, in places, may contain thin lenses of siliceous limestone. Where the Berea consists mostly of fine-grained sandstone, drillers have no problem identifying it; but where it is mostly siltstone and shale, particularly in the eastern part of the area, it is generally logged as shale.

The Berea is 20 to 30 feet thick in the west and thins eastward as it grades laterally into the 5-foot-thick Shellhammer Hollow Formation near the eastern edge of the study area.

The upper contact of the Berea is sharp but conformable with the overlying Orangeville Shale.

Shellhammer Hollow Formation

The Shellhammer Hollow Formation consists of a thin sequence of intercalated, irregularly bedded siltstones, silty mudstones, and silty shale. The siltstones become progressively less conspicuous east of the limit of the Berea, in the vicinity of Meadville, and the formation is mostly silty shale east of the report area, where it grades laterally into the Corry Formation. At the type section, about 3 miles north of Meadville, the formation consists of about 5 feet of lenticularly bedded siltstone intercalated with silty shale.

The Shellhammer Hollow grades laterally into the Berea Sandstone and Bedford Shale and is overlain by the Bartholomew Siltstone Member of the Orangeville Shale.

Cuyahoga Group

The Cuyahoga Group in northwestern Pennsylvania is generally divided into three formations: in ascending order, these are the Orangeville Shale, Sharpsville Sandstone, and Meadville Shale. Schiner and Kimmel (1972, p. A17) have pointed out that the Cuyahoga Group might almost be considered a single formation that consists dominantly of shale but contains widespread lenses of sandstone near the middle. For the purposes of this report, however, the threefold division of the Cuyahoga is retained and, where they can be defined, contacts are shown on the geologic map. Elsewhere the unit is mapped as Cuyahoga. The individual formations are difficult to distinguish both in outcrop and in gamma-ray logs. Although a gross shale-sandstone-shale sequence generally exists, lateral correlations are often uncertain. For example, the Sharpsville Sandstone often contains beds of sandstone that are stratigraphically equivalent to shale beds a few miles away.

The Cuyahoga is about 240 feet thick in the southwest and thins eastward to about 200 feet in the vicinity of Meadville. In the northern half of the area, erosion has greatly thinned or completely removed the Cuyahoga. It is mostly absent in the northwest.

Orangeville Shale. The Orangeville Shale is a soft, medium- to dark-gray, argillaceous to silty, blocky to fissile shale that contains thin beds of light-gray, very fine grained sandstone or siltstone. It contains concretions in some places and is commonly iron stained in outcrop. Sandstone and siltstone beds are most numerous near the top of the unit where it grades into the overlying Sharpsville Sandstone. The Orangeville erodes so rapidly that exposures are poor. A persistent and widespread siltstone, called the Bartholomew Siltstone Member by deWitt (1951), is present at or near the base of the Orangeville and is a prominent stratigraphic marker in Crawford County. The Bartholomew averages about a foot in thickness and is characterized by many curly dark-gray markings less than an inch long.

The Orangeville thins eastward from the Pennsylvania-Ohio line as a result of intertonguing of the Orangeville Shale and the Sharpsville Sandstone at progressively lower stratigraphic positions. The Orangeville ranges in thickness from 60 to 90 feet in the western and south-central part of the area and is 30 to 45 feet thick in the vicinity of Meadville.

The contact between the Orangeville and overlying Sharpsville is mostly gradational, but is sharp locally.

Sharpsville Sandstone. The Sharpsville Sandstone is composed of thin beds of sandstone that total as much as 40 feet in thickness and are separated at irregular intervals by beds of siltstone and shale. Locally, the Sharpsville may consist almost entirely of sandstone. In many places thin limestone is present near the base.

The sandstone of the Sharpsville is thin bedded, very hard, and uniformly silty and very fine grained. Generally, the sandstone breaks into flags or slabs. Where slabs are thicker than about 0.3 feet the sandstone characteristically fractures conchoidally. The shale is generally fissile and contains concretions.

The formation ranges in thickness from about 75 to 90 feet throughout the report area. Erosion has removed the Sharpsville in the northwest.

The contact between the Sharpsville and the overlying Meadville Shale is fairly well defined in some places and poorly defined elsewhere. The top of the Sharpsville becomes progressively less distinct northward.

Meadville Shale. The Meadville Shale consists of thin beds of micaceous siltstone and silty shale and some lenses of very fine to fine-grained sandstone as much as 10 feet thick. The shale is commonly fissile and contains brownish-gray sideritic concretions. Locally, the siltstone is ripple and current marked and contains worm borings and other trace fossils. Some beds of siltstone are full of worm borings. Invertebrate fossils, such as brachiopods, are more common in the Meadville than in any other Mississippian formation in the area. Silty or sandy limestone and limy siltstone and sandstone, 0.5 to 2 feet thick, are present locally.

Where not eroded, the Meadville Shale ranges in thickness from 60 to 90 feet and is generally overlain disconformably by the basal sandstones of the lower member of the Shenango Formation. Erosion has removed the Meadville in most of the northern half of the area.

Shenango Formation

The Shenango Formation is divided into two members. The lower member consists dominantly of sandstone, shale, and siltstone beds of irregular thickness, and the upper member consists chiefly of interbedded shale and siltstone. Erosion has removed most of the upper member of the formation and left thin patches of the lower member only in the south. In northwestern Pennsylvania a major unconformity at the top of the Shenango separates the Mississippian System from the overlying Pennsylvanian System.

Lower Member. The lower member of the Shenango Formation consists of beds of well-indurated, brown to gray to white, very fine to medium-grained sandstone that intertongue with beds of dark- to medium-gray shale and siltstone. The sandstone is commonly flaggy but in places is slabby to massive. Bedding in the shale and siltstone is generally laminated to thin bedded, but the siltstone is flaggy in places.

The number, position, and thickness of the sandstone beds differ from place to place. The base of the lower member is often massive sandstone in northwestern Pennsylvania and thus it is a conspicuous stratigraphic marker. Other sandstone beds within the member may be correlated over short distances, but the character of the entire formation often changes over distances of several miles. The lower member appears to become more thin bedded toward the north.

The lower member is present only in the higher uplands in the south. Its maximum thickness is about 100 feet. The contact with the upper member ranges from gradational to sharp.

Upper Member. The upper member consists of gray shale, intercalated with thin beds of siltstone and very fine grained sandstone, thin silty limestones, and thin layers of siderite concretions. Generally, the upper member is poorly exposed in outcrop.

It is present only along the southern border; elsewhere it has been removed by erosion. It is everywhere separated from the rocks of the overlying Pennsylvanian System by a regional unconformity. The contact may be difficult to place, however, if the basal beds of the Pennsylvanian Pottsville Group are shale. The unit has a maximum thickness of about 50 feet.

Pennsylvanian System

Following the deposition of the Shenango Formation and before the Pennsylvanian sediments were laid down, the area of western Crawford County was uplifted and tilted southward. The erosion that followed removed more of the Mississippian sediments in the north than in the south. As a result, Pennsylvanian sediments were deposited directly on both the Shenango and the Cuyahoga.

The Pennsylvanian-Mississippian contact is unconformable and difficult to define. In most places the contact is not exposed. Also, the lithology of the base of the Pennsylvanian is similar to the underlying Mississippian.

Pottsville Group

Only the two lowest formations of the basal Pottsville Group make up the Pennsylvanian System in this area. They are the Olean and the Connoquenessing Formations, in ascending order. These two formations consist principally of continental sandstones containing subordinate amounts of shale and some coal. Because sharp lateral changes in facies within short distances are common and because the lithologies of the formations are similar, mapping them is often difficult. Accordingly, they are grouped as undifferentiated Pottsville on the geologic map (Plate 1).

The Pottsville Group is present only on the highest hills in the south and has a maximum thickness of about 100 feet. It lies at the surface or beneath a thin covering of glacial drift.

Olean Formation. The Olean Formation, first traced by Ashburner (1880) from Olean, New York, to the "big bend" on the Allegheny River in

Warren County, Pennsylvania, is similar in lithology to and has been considered to be the same formation as the Sharon Conglomerate, which White (1881) traced from Sharon, Pennsylvania, east to the same area. Rittenhouse (1946) and Meckel (1967), however, have suggested that the Olean and Sharon originated from different source areas and are different units that are stratigraphically equivalent. According to Meckel (1967) the source area of the Sharon lies to the northwest and that of the Olean to the northeast. Dip directions of crossbeds of the strata mapped by White (1881) as Sharon in the report area indicate a northeastern and eastern source direction. Therefore, the rock strata previously considered Sharon in the report area is here mapped as the Olean Formation.

The Olean Formation consists of a yellow to gray to white, fine- to coarse-grained orthoquartzite that contains conglomeratic lenses and some thin, dark-gray to black beds of carbonaceous, coal-bearing shale. The shale beds, where present, are generally overlain by sandstone. According to Rittenhouse (1946) the sand grains of the Olean are more angular than those of the Sharon. Thin coal beds are reported in the high uplands in the south-central part of the area.

The bedding is commonly thick. Thin, planar crossbedding is common. The rock does not split readily along bedding planes.

The Olean has a maximum thickness of about 50 feet. Erosion has thinned or removed the formation in all but the higher parts of the uplands in the south. There it is commonly overlain by glacial drift or, beneath the higher hills, by other rocks of the Pottsville Group.

Connoquenessing Formation. The Connoquenessing Formation is probably present in the high knobs in the south where the Pottsville is thick. Sandstone and some shale was found above the stratigraphic interval generally assigned to the Olean, but a definite identification as Connoquenessing could not be made.

Quaternary System

Quaternary deposits, including material of both the Pleistocene and Holocene Series, cover most of the bedrock surface; however, the Holocene rocks are thin and of minor importance. Quaternary rocks are not shown on the geologic map (Plate 1), but their thicknesses are indicated on Plate 2. The distribution of glacial moraines according to White and others (1969) is shown in an inset map on Plate 2.

White and others (1969) have postulated that drift deposits of Illinoian(?) and of four Wisconsinan ages are present. Deposits of "pre-Illinoian" age may also be present beneath the Illinoian(?), but little information is available on any pre-Wisconsinan deposits.

One buried till of early Wisconsinan age (Titusville Till) and three tills of late Wisconsinan age that are exposed at the surface have been identified.

The exposed tills consist (from oldest to youngest) of Kent ground moraine, Lavery ground and end moraines, and Hiram ground and end moraines (see Plate 2).

Many of the large buried tributary valleys were probably formed after the valleys of the main drainage system were partially filled. At least two periods of deposition are involved in the glacial history of the tributary valleys, as drill holes frequently penetrate weathered glacial drift at depth. Outwash deposits, such as kames and kame terraces, cover the flanks of the large stream valleys. The areas covered by the outwash are shown by Shepps and others (1959).

CONCLUSIONS

Wells can supply at least enough water for domestic and stock use in a large part of the area, but the wells that tap Devonian bedrock, till, or the glacial lake deposits that fill most of the large valleys often have unsatisfactory yields. Large supplies of groundwater are available in places. Individual wells yield as much as 2,000 gpm. The largest yields are from wells usually less than 100 feet deep that tap outwash. Moderate yields are from sandstone.

Highly permeable outwash, which forms parts of the valley fill, currently (1975) furnishes large supplies of groundwater to industrial plants and municipalities and offers the best possibility for the development of additional supplies. The largest withdrawal from wells tapping valley-fill deposits is about 9 mgd from an aquifer in the vicinity of Meadville. However, an aquifer lying partly outside of the southeastern edge of the area has a potential yield of about 23 mgd and is largely unused at present.

Information on existing well fields indicates that additional large supplies of water can often be developed in the same general areas. Prospecting is aided by interpretation of the glacial stratigraphy, which suggests that the most favorable places for exploration are areas near the confluence of large stream valleys. Borehole data have indicated one site in French Creek valley about 2½ miles south of Meadville.

About three of four wells in the area are completed in bedrock because drift wells are apt to go dry as the water table declines each fall. The most important controls of yields from bedrock are the degree of fracturing, the lithology and thickness of the units penetrated, and the permeability of the drift cover. Most wells completed in bedrock yield water from fractures. Notable exceptions are those wells in the porous part of the Cussewago Sandstone. Sandstone and hard siltstone are more extensively fractured than shale and are the best bedrock aquifers. The fractures appear to be more prevalent along slopes than on the uplands. Yields of bedrock wells are least on hills, larger on slopes, and largest in valleys.

Bedrock aquifers differ considerably from place to place in their capacity to yield water, even within short distances. This is due to their lithologic variability and the effects of fracturing. In many places, geologic and hydrologic conditions combine to allow only one aquifer of several potential aquifers to yield significant amounts of water. The maximum yield of bedrock wells is 130 gpm, and the median is 12 gpm. A yield of 50 to 100 gpm is considered high, but yields of as much as 150 gpm can probably be obtained at favorable sites.

The most favorable bedrock aquifers are the thick sandstones; the least favorable are the shale formations. Thus, the Cussewago Sandstone is the best bedrock aquifer. It covers large areas, consistently yields good-quality water, and its wells have a median specific capacity of 0.96 gpm/ft. The areally extensive Sharpsville Sandstone is also a good aquifer. However, the Sharpsville becomes increasingly shaly northward and is not considered a good aquifer there. It has a median specific capacity of 0.74 gpm/ft. Yields from the Olean Formation, the lower member of the Shenango Formation, and the Berea Sandstone are often adequate for domestic use, but these units, for the most part, are not areally extensive. The Meadville, Orangeville, and Bedford Shales are commonly poor aquifers, though in places their yields are sufficient to supply individual households.

Devonian bedrock is generally a poor aquifer, but nonetheless an important one because it is the only bedrock unit that can be tapped in much of the north, the large stream valleys, and the deep tributary valleys. Many wells that tap the Devonian yield less than 1 gpm. The median specific capacity is 0.22 gpm/ft. In much of the north where the drift is thin, salty water occurs in the bedrock at depths of about 50 feet. Because yields of wells are low and salty water is found at shallow depth, consideration should be given to the installation of large reservoir bored wells, or of storage tanks, in areas where this aquifer must be used.

Potable water can be obtained from the Pennsylvanian and Mississippian rocks and from most of the drift. The quality of the water in the bedrock aquifers is chiefly related to their depth. Aquifers less than 75 feet below land surface commonly yield hard water that is locally high in iron. Aquifers more than about 200 feet deep commonly yield soft water that is low in iron. Aquifers of intermediate depth generally yield water of mixed quality. Because the better quality water in some areas is from deep aquifers, shallow contributing zones must be cased or cemented off to ensure good-quality water. Water from shallow wells may vary considerably in quality in response to seasonal precipitation patterns.

Salty water, high iron concentrations, high hardness, and the presence of gases are problems locally.

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FACTORS FOR CONVERTING U.S. CUSTOMARY UNITS IN THIS REPORT TO INTERNATIONAL SYSTEM (SI) UNITS

Multiply English units	*by*	*To obtain SI units*
acre	0.4047	hectare (ha)
foot (ft)	0.3048	meter (m)
feet per mile (ft/mi)	0.1894	meters per kilometer (m/km)
gallon	3.785	liter (l)
gallons per minute (gpm)	0.0631	liters per second (l/s)
gallons per day (gpd)	3.785	liters per day (l/d)
gallons per minute per foot (gpm/ft)	0.2070	liters per second per meter [(l/s)/m]
inch	2.540	centimeter (cm)
mile	1.609	kilometer (km)
million gallons per day (mgd)	0.0438	cubic meters per second (m^3/s)
square mile	2.590	square kilometer (km^2)
grains per gallon (gpg)	17.1	milligrams per liter (mg/l)

TABLE 6. RECORD OF WELLS

Well location: The number is that assigned to identify the well. It is prefixed by a two-letter abbreviation of the county. The lat-long is the coordinates in degrees and minutes of the southeast corner of a 1-minute quadrangle within which the well is located.

Use: A, air conditioning; C, commercial; H, household; I, irrigation; N, industrial; P, public supply; R, recreational; S, stock; T, institutional; U, unused.

Topographic setting: H, hilltop; S, hillside; T, terrace; U, undulating; V, valley flat; W, draw.

Aquifer: Qo, Pleistocene outwash; Qt, Pleistocene till; Po, Olean Formation; Msl, Shenango Formation, lower member; Mm, Meadville Shale; Msh, Sharpsville Sandstone; Mo, Orangeville Shale; Mbe, Berea Sandstone; Mbd, Bedford Shale; Mcu, Cussewago Sandstone; Dco, Conewango Group; Dct, Conneaut Group.

Lithology: c, clay; gr, gravel; ls, limestone; s, sand; sdgv, sand and gravel; ss, sandstone; sh, shale; st, siltstone.

Static water level: Depth--F, flows but head is not known.

Reported yield: gpm, gallons per minute.

Specific capacity: gpm/ft, gallons per minute per foot of drawdown.

Hardness: gpg, grains per gallon.

Specific conductance: Deg C, degrees Celsius.

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw- 1	4129-8008	Wayne Whitman	Moody Drilling Co., Inc.	1965	H	1425	S	Msl/ss
2	4129-8009	Ernest Edwards	Max Hickernell	1966	H	1403	S	Msl/ss
3	4146-8021	Conneaut Valley Sch. Dist.	Moody Drilling Co., Inc.	1969	P	972	S	Qo/sdgv
4	4147-8028	Joseph Perkins	Max Hickernell	1969	H	1088	V	Dco/sh
6	4148-8029	R. G. Reinke	Berkley D. Bossard	1970	H	1038	S	Dco/sh
7	4149-8028	Frank Vobrak	Max Hickernell	1969	P	980	T	Dco/sh
8	4147-8025	D. M. Mahoney	B. W. Bateman & Son	1968	H	1075	S	Dco/sh
9	4147-8025	Martin Duda	do.	1968	H	1062	S	Dco/sh
10	4129-8011	W. R. Wallace	Moody Drilling Co., Inc.	---	H	1362	H	Msl/ss
12	4147-8029	Leonard Kuchta	Max Hickernell	1968	H	1063	S	Dco/sh
13	4147-8029	G. W. Artman	do.	1968	H	1075	S	Dco/sh
14	4144-8008	R. J. Sheakley	do.	1970	H	1275	S	Qo/gr
15	4129-8020	Carl Pfaff	R. E. Mohr Well Drilling	1973	H	1125	S	Msh/ss
16	4129-8022	C. M. McCurdy	Lininger Drilling & Pumps	1964	H	1050	S	Mcu/ss
17	4129-8022	Jerry McCurdy	do.	1969	H	1060	S	Mbe/ss
18	4129-8022	L. J. Slingluff	Berkley D. Bossard	1967	H	1285	S	Msl/ss
19	4129-8022	M. M. Theiss	Moody Drilling Co., Inc.	1953	H	1301	S	Msl/ss
20	4129-8026	C. M. Cross	Lininger Drilling & Pumps	1970	H	1000	S	Qo/sdgv
21	4129-8026	Walnut Creek Golf Course	do.	1968	H	1020	T	Mcu/ss
22	4129-8026	David Unger	do.	1961	H	1090	S	Msh/sh
23	4129-8025	J. W. Staup	R. E. Mohr Well Drilling	1973	H	1050	S	Msh/ss
24	4129-8027	T. M. Norman	Lininger Drilling & Pumps	1960	H	977	T	Qo/gr
25	4129-8028	Mrs. Paul Dilley	do.	1971	H	1048	S	Mo/sh
26	4129-8028	Russel Floch	do.	1970	H	1061	S	Mcu/ss
27	4129-8029	P. C. Collins	do.	1968	H	1058	S	Mbe/sh
28	4129-8029	William Rodgers	do.	1962	H	1064	S	Mcu/ss
29	4130-8008	A. N. Kolcun	Moody Drilling Co., Inc.	1966	H	1392	H	Msl/ss
30	4130-8008	Thomas Cornell	Max Hickernell	1972	H	1372	S	Po/ss
31	4130-8009	L. E. Rinhart	Moody Drilling Co., Inc.	1965	H	1392	S	Msl/ss
32	4130-8009	E. M. Horne	do.	1964	H	1390	S	Msl/ss
33	4130-8009	J. R. Sacco	do.	1964	H	1382	S	Msl/ss
35	4130-8009	Frank Kotwa	Berkley D. Bossard	1969	H	1384	S	Msl/ss
36	4130-8009	W. C. Viott	Max Hickernell	1963	H	1368	S	Msl/ss
37	4130-8009	P. B. Stallsmith	Moody Drilling Co., Inc.	1952	H	1382	H	Po/ss
38	4130-8009	Mrs. Richard Arbuckle	do.	1963	H	1340	S	Msl/ss
39	4130-8011	Donald Herman	Berkley D. Bossard	1973	H	1358	S	Msl/ss
40	4130-8011	Frank Bitenc	Moody Drilling Co., Inc.	1954	H	1362	S	Msl/ss
41	4130-8012	do.	do.	1959	H	1330	S	Qo/gr
42	4130-8014	Frank Ekis	do.	1957	H	1312	H	Msl/ss
43	4130-8014	T. H. Hough	do.	1952	H	1308	H	Msl/ss
44	4130-8015	David Wotherspoon	Max Hickernell	1961	H	1249	S	Qo/gr
45	4130-8015	Irving Huch	Moody Drilling Co., Inc.	1957	H	1288	S	Msl/ss
46	4130-8015	J. E. Renkenburger	R. E. Mohr Well Drilling	1970	H	1248	S	Msh/sh
47	4130-8015	Albert Porter	Max Hickernell	1961	H	1257	S	Qo/gr
48	4130-8016	Jack Renkenberger	R. E. Mohr Well Drilling	1972	H	1372	S	Po/st
49	4130-8016	J. J. Heisel	Lininger Drilling & Pumps	1969	H	1352	S	Msl/ss
50	4130-8016	Richard Williams	Berkley D. Bossard	1972	H	1364	S	Msl/ss
51	4130-8017	N. R. Fausnaught	Moody Drilling Co., Inc.	1953	H	1370	S	Po/st
52	4130-8017	Ben Weaver	---	---	H	1380	S	Po/ss
53	4130-8017	Walter Waid	Berkley D. Bossard	1969	H	1348	S	Msl/ss
54	4130-8017	Gale Unger	Lininger Drilling & Pumps	1970	H	1360	H	Msl/st
55	4130-8017	R. E. Donohoe	do.	---	H	1360	H	Msl/ss
56	4130-8017	William Marsh	Berkley D. Bossard	1972	H	1351	S	Msl/st
57	4130-8018	Elmer Courtney	W. G. McDowell	1965	H	1357	S	Mcu/ss
58	4130-8018	Fallowfield Ch.	Moody Drilling Co., Inc.	1957	H	1300	S	Msl/ss
59	4130-8019	Robert Ewing	Lininger Drilling & Pumps	---	H	1245	S	Mcu/ss
60	4130-8019	Helen Goodemote	do.	1972	H	1230	S	Msh/sh
61	4130-8019	William Popichak	do.	1968	H	1280	S	Msh/sh
62	4130-8019	J. N. Laird	Berkley D. Bossard	1972	H	1250	S	Mcu/ss
63	4130-8019	G. G. Laird	Moody Drilling Co., Inc.	1963	H	1232	S	Msh/sh
64	4130-8020	R. L. Rader	do.	1964	H	1161	S	Mcu/ss
65	4130-8020	James Bradley	Lininger Drilling & Pumps	1962	H	1165	S	Mbe/sh
66	4130-8020	R. H. Rader	R. E. Mohr Well Drilling	1968	H	1090	S	Mbe/sh
67	4130-8020	J. L. Unger	Moody Drilling Co., Inc.	1964	H	1190	S	Mcu/ss
68	4130-8020	V. M. Kearns	do.	1964	H	1161	S	Mcu/ss
70	4130-8020	Norris Bradley	R. E. Mohr Well Drilling	1972	H	1111	S	Mbe/st
71	4130-8020	J. C. Mitchell	---	1957	H	1153	S	Mo/sh
72	4130-8020	O. C. Williams	Moody Drilling Co., Inc.	1966	H	1160	S	Mcu/ss
73	4130-8020	M. M. Fisher	do.	1964	H	1128	S	Mcu/ss
74	4130-8021	John Gramas	Lininger Drilling & Pumps	1966	H	1082	H	Mcu/st
75	4130-8021	Kenneth Gerber	do.	1961	H	1010	T	Mcu/ss
76	4130-8022	Niagara Corp.	Moody Drilling Co., Inc.	1952	H	1030	T	Mcu/ss

CONTINUED)

Total depth below land urface feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
91	42	6	52	24	6/65	10	.48	---	---	---	Cw- 1
60	---	7	32;47;54	12	6/66	20	---	---	---	---	2
100	95	8	94	42	11/69	50	1.1	---	---	---	3
50	24	8	---	5	9/69	3	---	9	750	---	4
60	35	6	10	6	7/70	1	.02	---	---	---	6
40	20	8	20	10	5/69	4	---	---	---	---	7
50	19	6	15;25	10	7/68	6	.17	---	---	---	8
55	19	---	25	10	7/68	2	.05	---	---	---	9
51	49	---	---	15	5/51	15	---	13	525	---	10
48	17	8	18	4	6/68	2	---	6	700	---	12
65	15	6	16	2	6/68	1	---	---	---	---	13
66	66	6	62	38	9/70	5	---	---	---	---	14
108	22	7	100	88	4/73	40	20	---	---	---	15
170	58	5	---	30	5/64	8	.21	---	---	---	16
88	46	7	---	35	11/69	30	.57	---	---	---	17
31	29	6	26	20	10/67	15	7.5	---	---	---	18
46	26	7	---	15	5/53	7	---	---	---	---	19
87	87	7	---	26	3/70	8	.33	---	---	---	20
125	117	7	---	22	7/68	60	1.8	---	---	---	21
85	30	7	---	40	8/61	30	2.0	---	---	---	22
47	21	7	---	8	2/73	40	1.0	---	---	---	23
71	79	7	---	F	4/60	10	---	---	---	---	24
55	27	7	---	14	12/71	15	.71	---	---	---	25
175	21	7	---	74	9/70	20	.31	---	---	---	26
140	40	7	---	70	4/68	40	1.3	---	---	---	27
157	---	---	---	72	5/62	30	1.9	---	---	---	28
142	58	6	125	46	4/66	25	.26	---	---	---	29
46	38	6	40	28	5/72	15	---	---	---	---	30
120	40	6	40;65;107	39	6/65	5	.14	---	---	---	31
92	32	6	75	50	6/64	7	---	---	---	---	32
76	32	6	40	40	6/64	20	---	---	---	---	33
67	19	6	23;49	44	11/69	35	12	---	---	---	35
63	17	6	17;53	19	8/63	15	1.4	---	---	---	36
60	51	7	---	40	8/52	15	---	---	---	---	37
57	24	6	24	16	11/63	7	.17	---	---	---	38
51	40	6	39	7	2/73	20	20	---	---	---	39
100	57	7	---	17	6/54	20	---	---	---	---	40
166	166	6	---	35	4/59	40	---	---	---	---	41
72	25	6	---	20	10/57	10	---	8	450	---	42
22	19	7	---	10	11/52	30	---	---	---	---	43
30	30	7	26	16	1/61	5	.36	---	---	---	44
53	50	6	---	8	1957	20	---	---	---	---	45
100	36	7	---	12	5/70	3	.17	---	---	---	46
30	30	7	26	19	1/61	5	.45	---	---	---	47
70	64	7	---	22	12/72	5	.62	---	---	---	48
94	50	7	45	8	1969	40	4.0	---	---	---	49
76	66	6	59	15	5/72	70	4.7	---	---	---	50
80	46	7	---	28	4/53	7	---	---	---	---	51
72	---	---	---	34	---	30	---	---	---	---	52
64	57	6	21	---	---	5	---	---	---	---	53
90	71	7	---	35	9/70	12	.22	---	---	---	54
60	35	7	36;47	15	---	80	16	---	---	---	55
120	55	6	78;112	51	11/72	20	.41	---	---	---	56
453	125	---	---	300	6/65	12	12	---	---	---	57
60	30	6	---	20	1957	20	---	---	---	---	58
365	---	---	---	---	---	---	---	---	---	---	59
40	15	7	---	5	10/72	40	2.7	---	---	---	60
125	---	---	---	16	12/68	2	.02	---	---	---	61
342	68	6	13;306	236	5/72	20	.64	5	410	8.4	62
85	---	8	---	15	8/63	5	---	---	---	---	63
287	79	6	249	152	8/64	10	.14	---	---	---	64
186	32	7	---	120	8/62	30	6.0	---	---	---	65
95	31	7	---	46	10/68	7	.24	---	---	---	66
339	92	6	45;77;267	187	8/64	30	.20	3	480	9.4	67
302	54	6	30;265	153	4/65	20	.17	---	---	---	68
118	50	7	108	77	8/72	18	.44	---	---	---	70
88	42	8	---	40	6/57	20	---	---	---	---	71
292	63	6	246	103	7/66	30	.16	---	---	---	72
226	20	6	198	116	11/64	15	.14	---	---	---	73
---	80	7	---	---	---	---	---	3	450	8.2	74
142	136	7	---	F	2/61	20	.40	---	---	---	75
100	27	8	---	12	11/52	15	---	---	---	---	76

TABLE 6

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer litholo
Number	Lat-Long							
Cw- 78	4145-8007	P. G. Marly	Moody Drilling Co., Inc.	1952	H	1282	S	Qo/gr
79	4148-8022	L. H. Griffis	J. M. Cole	1921	H	905	T	Qo/gr
80	4145-8021	Fred Higley	do.	1919	H	1092	S	Dco/sh
81	4145-8010	M. D. Patton	Moody Drilling Co., Inc.	1953	H	1402	S	Mbe/ss
82	4145-8009	D. M. Merritt	do.	1955	H	1520	S	Mo/ss
83	4145-8009	W. O. Manbeck	do.	1955	H	1535	S	Msh/st
84	4145-8010	W. S. Biddlestone	do.	1958	H	1388	S	Mcu/ss
85	4145-8014	William Hodge	Max Hickernell	1963	H	1108	T	Qo/gr
86	4145-8025	F. C. Gillette	J. M. Cole	1923	H	1102	S	Dco/sh
87	4145-8014	Charles Kelyman	Moody Drilling Co., Inc.	1953	H	1110	T	Dco/sh
88	4142-8021	Bessemer & Lake Erie R. R.	J. W. Young	1923	H	1011	V	Qo/s
89	4145-8016	L. W. Smith	Moody Drilling Co., Inc.	1958	H	1168	S	Qo/sdgv
90	4145-8016	Raymond Morris	do.	1972	H	1174	S	Qo/sdgv
91	4149-8015	L. M. Hawkins	J. M. Cole	1913	H	1130	S	Dco/ss
92	4149-8014	John Lucas	do.	1914	H	1140	S	Dco/sh
93	4147-8013	W. A. Bower	---	1922	H	1152	S	Dco/sh
94	4130-8025	James Pitts	R. E. Mohr Well Drilling	1973	H	1318	S	Msl/ss
95	4145-8016	L. J. Boyles	Moody Drilling Co., Inc.	1951	H	1155	S	Qo/gr
96	4146-8014	Vernon Schlosser	J. M. Cole	1920	H	1110	S	Qo/s
98	4149-8009	Joseph Skalko	do.	1920	H	1360	S	Qo/gr
99	4149-8008	E. J. Culbertson	---	1918	H	1340	S	Dco/sh
100	4145-8017	E. R. McFadden	Max Hickernell	1961	H	1252	S	Dco/sh
101	4145-8017	Michael Adkins	Moody Drilling Co., Inc.	1951	H	1220	H	Dco/ss
102	4145-8017	C. L. Hood	do.	1955	H	1220	S	Dco/ss
103	4145-8017	Richard Shidemantle	Max Hickernell	1963	H	1160	S	Qo/gr
104	4145-8018	C. F. Weller	Moody Drilling Co., Inc.	1954	H	1262	S	Dco/sh
105	4145-8019	G. C. Weisz	do.	1951	H	1230	S	Dco/sh
106	4145-8020	Alice Plautz	do.	1958	H	1067	S	Dco/sh
107	4145-8020	R. D. Loughner	Max Hickernell	1961	H	1063	S	Dco/sh
109	4145-8020	Lamonte Miller	Moody Drilling Co., Inc.	1953	H	1165	S	Dco/st
110	4145-8020	D. T. Snyder	Max Hickernell	1963	H	1205	H	Qo/gr
111	4145-8021	D. M. Pool	Moody Drilling Co., Inc.	1948	H	1070	S	Dco/st
112	4145-8022	Harold Mook	do.	1952	H	1020	S	Dco/sh
114	4145-8022	Bor. of Conneautville	---	---	P	938	T	Qo/sdg
115	4145-8023	M. S. Knapik	Max Hickernell	1972	H	990	W	Dco/sh
116	4145-8023	F. E. Buel	Moody Drilling Co., Inc.	1949	H	1051	H	Dco/sh
117	4145-8023	J. E. Jandik	Max Hickernell	1965	H	1045	S	Dco/sh
118	4145-8023	R. S. Foster	Moody Drilling Co., Inc.	1958	H	1052	H	Dco/sh
119	4145-8023	Grover McPeak	do.	1955	H	1032	S	Dco/sh
120	4145-8024	Dale Lawrence	Max Hickernell	1963	H	1095	S	Dco/sh
121	4145-8024	G. E. Williams	do.	1964	H	1050	S	Dco/sh
122	4145-8027	C. W. Culver	Moody Drilling Co., Inc.	1959	H	1115	S	Dco/sh
123	4145-8027	H. D. Worden	do.	1953	H	1125	S	Dco/sh
124	4145-8027	Bessie Cote	do.	1950	H	1105	S	Dco/sh
125	4145-8028	E. H. Casbohm	Max Hickernell	1964	H	1099	S	Qo/gr
126	4145-8029	Herbert Haught	do.	1964	H	1119	S	Dco/sh
127	4145-8029	Lawrence Morrison	do.	1963	H	1112	S	Dco/sh
128	4146-8007	V.F.W.	do.	1973	C	1265	S	Dco/sh
129	4146-8010	Schnarrs Construction Inc.	Berkley D. Bossard	1973	H	1328	S	Dco/st
130	4146-8010	J. A. Ball	Moody Drilling Co., Inc.	1956	H	1328	S	Dco/sh
131	4146-8011	Louis Reed	Max Hickernell	1964	H	1380	S	Dco/sh
132	4146-8012	Ronald DeWoody	do.	1960	H	1260	S	Dco/sh
133	4144-8010	Adrel Peters	J. M. Cole	1921	---	1218	S	Dco/st
134	4146-8012	J. L. Gajdowski	Moody Drilling Co., Inc.	1959	H	1230	S	Dco/sh
135	4144-8009	Bradford Luce	J. M. Cole	1929	H	1253	S	Qo/s
136	4146-8013	Anthony Jantosik	Moody Drilling Co., Inc.	1958	H	1165	H	Dco/sh
137	4146-8014	W. M. Eells	Max Hickernell	1964	H	1111	T	Qo/gr
138	4146-8014	Nick Weidner	Moody Drilling Co., Inc.	1953	H	1112	S	Dco/sh
139	4146-8015	J. J. Wojsiat	Max Hickernell	1963	H	1112	T	Qo/gr
140	4146-8015	John Wasko	Moody Drilling Co., Inc.	1951	H	1112	T	Qo/gr
141	4146-8016	R. P. Nelson	Max Hickernell	1964	H	1126	T	Qo/gr
143	4142-8010	J. A. Dahl	J. M. Cole	1921	H	1320	S	Qo/sdg
144	4142-8013	F. E. Oster	---	1874	H	1092	T	Qo/s
145	4146-8018	Jack McCormick	Moody Drilling Co., Inc.	1954	H	1248	H	Qo/gr
146	4146-8018	Carmen Ellis	do.	1954	H	1235	S	Qo/gr
147	4146-8018	F. E. Askey	do.	1952	H	1225	S	Qo/gr
148	4146-8019	Nelson Shaffer	do.	1951	H	1252	H	Qo/gr
150	4146-8021	Conneaut Valley High Sch.	do.	1959	P	1020	S	Dco/sh
151	4146-8021	John Lehman	do.	1963	H	1002	S	Dco/sh
152	4146-8021	Vincent Mehalko	do.	1948	C	991	S	Qo/gr
153	4146-8022	Ernest Ransom	Berkley D. Bossard	1968	H	918	T	Qo/gr
154	4146-8022	H. W. Ransom	Moody Drilling Co., Inc.	1963	H	918	T	Qo/gr
155	4146-8023	P. A. Kaczmorski	Berkley D. Bossard	1968	H	1000	S	Dco/sh
157	4146-8024	H. W. Green	Moody Drilling Co., Inc.	1965	H	1061	S	Dco/sh
158	4146-8024	Clayton Kuhn	do.	1960	H	1065	S	Dco/sh
159	4146-8025	F. A. Crowley	Max Hickernell	1965	H	1125	H	Dco/sh
160	4146-8025	Fred Post	Moody Drilling Co., Inc.	1959	H	1130	H	Dco/sh
161	4146-8025	K. W. Thomas	do.	1959	H	1072	S	Qo/gr
162	4146-8025	H. C. Cramer	do.	1950	H	1068	S	Dco/sh

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hardness (gpg)	Specific conductance (micromhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
121	121	7	---	80	5/52	4	---	---	---	---	Cw- 78
113	---	4	---	F	---	---	---	---	---	---	79
74	58	4	---	30	---	---	---	---	---	---	80
72	52	8	---	30	10/53	30	---	---	---	---	81
84	54	8	---	45	7/55	5	---	11	450	8.9	82
73	22	8	---	30	5/55	30	---	---	---	---	83
35	37	8	---	50	8/58	20	---	---	---	---	84
45	45	6	41	10	11/63	10	1.0	---	---	---	85
87	57	4	---	20	---	---	---	---	---	---	86
64	52	7	---	25	12/53	6	---	---	---	---	87
154	154	4	---	F	---	---	---	---	---	---	88
87	87	6	---	15	6/58	20	---	---	---	---	89
87	87	6	74;82	21	9/72	20	20	---	---	---	90
54	---	4	---	10	---	---	---	10	500	---	91
87	---	4	---	12	---	---	---	---	---	---	92
53	---	6	---	10	---	---	---	---	---	---	93
66	21	7	50	14	5/73	10	.19	---	---	---	94
30	30	7	---	20	11/51	20	---	---	---	---	95
132	132	4	---	25	---	---	---	---	---	---	96
57	57	4	---	5	---	---	---	--	---	---	98
46	23	4	---	10	---	---	---	---	---	---	99
74	17	7	18;30	15	8/61	5	.08	---	---	---	100
80	25	7	---	30	7/51	6	---	10	575	---	101
143	86	7	95;143	25	4/55	2	---	---	---	---	102
95	95	4	92	5	---	10	---	---	---	---	103
50	37	7	---	18	8/54	10	---	---	---	---	104
56	35	7	---	18	10/51	10	---	---	---	---	105
127	55	8	---	60	4/58	12	---	---	---	---	106
165	66	6	90;130	43	8/61	2	.02	---	---	---	107
72	33	7	---	16	3/53	6	---	---	---	---	109
90	90	6	86	40	9/63	4	---	---	---	---	110
51	25	6	30;45;49	11	7/48	6	.15	---	---	---	111
85	56	8	---	35	1952	1	---	---	---	---	112
78	78	6	---	5	4/64	200	20	---	---	---	114
45	18	8	32	3	3/72	4	---	---	---	---	115
81	55	7	---	22	5/49	1	---	---	---	---	116
83	60	6	60	27	9/65	1	---	---	---	---	117
60	55	12	---	---	---	1	---	11	1000	---	118
108	63	7	---	50	6/55	2	---	---	---	---	119
49	24	6	26	18	11/63	20	5.0	---	---	---	120
60	---	---	---	---	12/64	---	---	---	---	---	121
51	45	8	28	12	10/59	15	---	---	---	---	122
64	33	8	27	16	3/53	2	---	---	---	---	123
58	46	5	---	10	8/50	3	---	---	---	---	124
25	25	6	21	15	10/64	7	---	---	---	---	125
37	16	6	21;32	6	5/64	15	---	---	---	---	126
85	23	8	23;41	13	8/63	1	---	---	---	---	127
50	28	8	32	20	1/73	15	---	8	500	---	128
60	18	6	18	14	5/73	10	.28	---	---	---	129
40	32	8	---	10	9/56	18	---	---	---	---	130
58	32	6	34;53	10	6/64	20	20	---	---	---	131
90	56	7	70	26	11/60	3	.05	7	410	---	132
66	10	4	---	6	---	---	---	---	---	---	133
55	46	8	---	30	8/59	35	---	---	---	---	134
118	118	3	---	88	---	---	---	---	---	---	135
130	102	8	---	60	2/58	4	---	---	---	---	136
153	153	6	---	11	9/64	20	.22	---	---	---	137
132	129	---	---	6	3/53	40	---	---	---	---	138
80	80	6	---	10	6/63	8	.11	8	320	---	139
128	128	7	---	18	11/51	20	---	7	320	---	140
40	40	6	---	8	4/64	8	---	---	---	---	141
123	123	4	---	20	---	---	---	---	---	---	143
19	19	60	---	---	---	---	---	---	---	---	144
170	170	7	---	80	9/54	5	---	---	---	---	145
78	78	7	---	25	10/54	15	---	10	380	---	146
75	75	7	---	12	11/52	60	---	---	---	---	147
38	38	7	---	12	11/51	4	---	14	540	---	148
130	70	20	---	F	2/59	20	---	---	---	---	150
94	47	8	25	25	10/63	5	.07	---	---	---	151
75	75	---	---	40	8/48	4	.11	---	---	---	152
40	40	6	34	9	9/68	12	1.7	---	---	---	153
51	51	6	46	12	10/63	13	.72	---	---	---	154
50	26	6	30;40	13	9/68	12	.60	---	---	---	155
47	20	8	15	2	12/65	4	.09	---	---	---	157
70	33	8	---	18	10/60	5	---	---	---	---	158
44	20	6	---	6	9/65	6	---	---	---	---	159
47	31	6	---	1	11/59	12	---	---	---	---	160
30	30	8	---	14	8/59	10	---	---	---	---	161
75	30	6	---	4	8/50	E	---	---	---	---	162

TABLE 6,

Well location								
Number	Lat-Long	Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ litholog
Cw- 164	4147-8008	Alan Crays	Max Hickernell	1963	H	1295	S	Dco/sh
165	4147-8008	P. A. Rutter	Berkley D. Bossard	1972	H	1355	S	Dco/st
166	4147-8008	R. E. Wetsell	Max Hickernell	1972	H	1325	S	Dco/sh
167	4147-8013	R. M. Eells	do.	1964	H	1160	H	Qo/gr
168	4147-8013	Robert Mraz	do.	1965	H	1152	H	Qo/gr
169	4147-8015	Mike Chaklos	Moody Drilling Co., Inc.	1949	H	1228	S	Dco/sh
170	4147-8015	H. J. Chandley	Max Hickernell	1972	H	1220	S	Dco/sh
171	4147-8018	Frank Schweller	Moody Drilling Co., Inc.	1954	H	1205	S	Dco/sh
172	4147-8019	Forbes Davis	do.	1955	H	1242	H	Dco/sh
173	4147-8019	John Teed	do.	1956	H	1225	S	Dco/sh
174	4133-8022	West Fallowfield Twp. Sch.	---	1928	H	1065	S	Mbe/st
175	4130-8022	A. B. LaSalle	---	1928	H	1100	W	Mo/ss
176	4147-8020	J. Rayokovich	Moody Drilling Co., Inc.	1954	H	1212	S	Dco/sh
177	4147-8021	O. E. Smock	do.	1959	H	972	S	Qo/gr
178	4147-8021	James Ross	do.	1952	H	958	S	Dco/sh
180	4133-8012	Kebert Enterprises	Layne-New York Co., Inc.	1942	U	1059	T	Qo/sdgv
181	4133-8012	do.	do.	1942	U	1060	V	Qo/sdgv
182	4133-8012	do.	do.	1942	U	1060	T	Qo/sdgv
183	4132-8009	do.	do.	1942	N	1060	T	Qo/sdgv
184	4132-8009	do.	do.	1942	N	1063	T	Qo/sdgv
185	4132-8008	do.	do.	1942	U	1076	T	Qo/sdgv
186	4132-8007	do.	do.	1942	U	1062	T	Qo/sdgv
197	4133-8012	do.	do.	1942	U	1059	V	Qo/s
198	4130-8022	G. R. Davis	R. E. Mohr Well Drilling	1970	H	1035	T	Mbe/st
199	4130-8022	Rex Caldwell	Lininger Drilling & Pumps	1963	H	1100	S	Mcu/ss
204	4130-8009	Edward Kotwa	Berkley D. Bossard	1968	H	1450	H	Po/ss
205	4130-8022	James Unger	Moody Drilling Co., Inc.	1951	H	1030	S	Mo/sh
206	4130-8022	John Stevens	do.	1950	H	1033	S	Mbe/st
207	4130-8022	William Benetin	do.	1964	H	1250	S	Msh/st
208	4130-8022	Clifford Amon	R. E. Mohr Well Drilling	1972	H	1252	S	Msh/st
209	4131-8008	R. R. Burchill	Max Hickernell	1967	H	1150	S	Msh/st
210	4130-8023	John Ondulich	Lininger Drilling & Pumps	1960	H	1310	S	Msl/ss
211	4130-8023	John Vanderstappen	do.	1967	H	1300	S	Msl/st
212	4130-8024	John Potase	R. E. Mohr Well Drilling	1968	H	1340	S	Msl/ss
213	4130-8026	J. B. Crawford	Moody Drilling Co., Inc.	1965	H	1218	S	Msh/st
214	4130-8026	Walnut Creek Golf Course	Lininger Drilling & Pumps	1971	I	1040	S	Mcu/ss
215	4130-8026	J. M. Krach	Moody Drilling Co., Inc.	1951	H	1278	S	Msl/ss
216	4130-8026	Edward Mullen	Berkley D. Bossard	1967	H	1276	S	Msl/sh
217	4130-8027	Pa. Dept. of Forests and Waters	Moody Drilling Co., Inc.	1949	H	1026	S	Qo/gr
218	4130-8027	do.	Lininger Drilling & Pumps	---	H	1074	S	Dco/sh
219	4130-8027	Norman Valesky	do.	1965	H	1072	S	Mcu/ss
220	4130-8027	Francis Sturm	do.	1969	H	1030	S	Qo/sdgv
221	4130-8027	W. C. Edwards	do.	1967	H	1030	S	Qo/sdgv
222	4130-8028	Pa. Dept. of Forests and Waters	Moody Drilling Co., Inc.	1950	H	1020	S	Mbe/st
223	4130-8028	do.	do.	1950	H	1042	S	Mbe/st
224	4130-8028	Richard Flynn	Lininger Drilling & Pumps	1965	H	1045	S	Mcu/ss
225	4130-8028	R. W. Flynn	R. E. Mohr Well Drilling	1967	H	1052	S	Mcu/ss
226	4130-8028	Norman Moss	Lininger Drilling & Pumps	---	U	1053	S	Mcu/ss
227	4130-8028	Pa. Dept. of Forests and Waters	---	1959	P	1010	S	Mbd/sh
228	4130-8028	P. L. Moss	Moody Drilling Co., Inc.	1947	H	1045	S	Mbe/st
229	4130-8028	J. A. Kuntz	Lininger Drilling & Pumps	1968	H	1042	S	Mcu/ss
230	4131-8014	Millard & Hill	Harland H. Knapp	1969	H	1282	S	Msl/ss
231	4130-8011	Norman Mitcheltree	Berkley D. Bossard	1969	H	1362	S	Msl/ss
232	4131-8010	William Brown	do.	1970	H	1312	S	Msl/ss
233	4130-8011	Lawrence Dalton	do.	1970	H	1380	S	Msl/ss
235	4133-8014	F. O. Edeburn	do.	1970	H	1138	S	Mcu/ss
236	4133-8014	David Armor	do.	1970	H	1150	S	Msh/st
237	4131-8011	W. L. Dunn	Max Hickernell	1970	I	1333	H	Qo/gr
238	4131-8008	C. A. Robertson	do.	1970	H	1242	S	Msh/st
239	4130-8009	Ralph Rosenborough	do.	1970	H	1355	H	Msl/st
240	4131-8009	J. O. Vatter	do.	1970	H	1080	S	Qo/gr
241	4130-8011	Ronald Wrighter	Berkley D. Bossard	1967	H	1345	S	Msl/ss
242	4131-8011	William White	Max Hickernell	1969	H	1240	S	Msh/st
243	4129-8010	E. C. Dalton	do.	1968	H	1377	S	Msl/ss
244	4130-8011	Wesley McCoy	Berkley D. Bossard	1968	H	1354	S	Msl/ss
246	4131-8009	Charles Vatter	do.	1968	H	1072	S	Qo/gr
247	4131-8011	Mrs. Talkington	Max Hickernell	1967	H	1335	S	Msl/ss
248	4132-8011	Sun Oil Co.	Norman R. Hassel	1969	C	1072	S	Qo/gr
249	4133-8013	Alice Wescott	Berkley D. Bossard	1969	H	1110	S	Mcu/ss
250	4131-8007	Mumford Church	Moody Drilling Co., Inc.	1956	H	1132	S	Mo/sh
251	4133-8013	Faith Manor	Berkley D. Bossard	1968	T	1132	S	Mcu/ss

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tal pth low nd face et)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hardness (gpg)	Specific conductance (micromhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
60	28	6	32;48;57	18	10/63	8	---	---	---	---	Cw- 164
70	54	6	28;50	24	10/72	15	.58	---	---	---	165
52	28	8	32;47	11	6/72	12	---	---	---	---	166
01	101	6	98	60	9/64	10	---	7	360	---	167
65	65	7	40	25	12/65	15	---	---	---	---	168
47	41	7	---	20	9/49	16	1.3	7	550	---	169
05	26	8	72	14	6/72	2	---	---	---	---	170
40	40	7	---	12	4/54	15	---	16	630	---	171
42	19	8	---	8	4/55	9	---	---	---	---	172
65	35	8	---	8	7/56	2	---	---	---	---	173
37	---	---	---	15	---	---	---	---	---	---	174
18	---	2	---	---	---	---	---	---	---	---	175
80	47	7	---	15	5/54	2	---	8	460	---	176
48	48	8	---	25	12/59	12	---	---	---	---	177
96	41	7	---	---	---	---	---	---	---	---	178
80	65	18	---	+4	8/42	700	12.8	---	---	---	180
84	69	18	---	+4	8/42	960	14.3	---	---	---	181
72	52	18	---	+4	8/42	650	15.8	---	---	---	182
45	115	18	---	+4	8/42	776	7.6	---	---	---	183
64	49	18	---	+4	8/42	1340	28	---	---	---	184
90	75	18	---	+2	8/42	1230	20	---	---	---	185
74	54	18	---	+1	8/42	1045	21	---	---	---	186
26	286	8	---	11	1942	---	---	---	---	---	197
85	40	7	---	25	9/70	12	2.4	---	---	---	198
90	---	6	---	50	10/63	30	.66	---	---	---	199
05	98	6	45;80;98	68	5/68	40	2.4	---	---	---	204
54	22	5	---	20	4/51	10	---	---	---	---	205
84	30	5	---	24	7/50	10	---	---	---	---	206
12	92	6	---	95	7/64	5	---	---	---	---	207
20	35	7	---	68	4/72	9	.17	---	---	---	208
70	28	6	41;56;68	20	4/67	40	4.0	---	---	---	209
50	23	7	---	14	10/60	12	.75	---	---	---	210
00	30	7	---	35	9/67	10	.21	---	---	---	211
02	68	7	---	47	5/68	40	13	---	---	---	212
06	32	6	68	32	4/65	7	.06	---	---	---	213
68	64	8	---	55	9/71	60	2.4	---	---	---	214
84	18	7	---	---	---	10	---	---	---	---	215
88	19	6	15;20	15	11/67	8	.12	---	---	---	216
58	---	7	---	---	---	20	---	---	---	---	217
55	223	8	---	84	---	2	---	---	---	---	218
74	93	7	---	67	8/65	30	.57	---	---	---	219
42	142	7	---	26	1969	15	.13	---	---	---	220
37	137	7	---	26	4/67	60	1.2	---	---	---	221
47	18	7	---	10	1/50	20	---	---	---	---	222
70	48	7	---	20	1/50	22	1.5	---	---	---	223
19	64	7	---	47	11/65	30	3.7	---	---	---	224
38	42	7	---	---	---	---	---	---	---	---	225
25	46	7	---	30	---	40	1.3	---	---	---	226
71	49	7	---	9	12/59	45	11	---	---	---	227
51	27	6	---	6	1947	40	1.3	---	---	---	228
93	32	7	---	43	7/68	40	3.1	---	---	---	229
51	28	6	35;48	8	9/69	8	.22	---	---	---	230
20	89	6	33;95	24	10/69	30	1.2	---	---	---	231
52	30	6	33	27	3/70	35	5.0	---	---	---	232
10	61	6	80	22	4/70	2	.02	---	---	---	233
42	36	6	134	50	6/70	2	.02	---	---	---	235
41	36	6	12;36	28	7/70	20	4.0	---	---	---	236
70	70	6	65	10	8/70	20	---	---	---	---	237
70	24	6	41;60	14	10/70	20	20	---	---	---	238
67	44	6	45;63	15	10/70	20	---	---	---	---	239
13	113	6	102	30	10/70	20	---	---	---	---	240
50	34	6	32	6	9/67	50	2.1	---	---	---	241
94	29	7	41;85	50	4/69	12	---	---	---	---	242
56	23	6	31;52	6	12/68	7	---	---	---	---	243
40	40	6	34;36;40	40	9/68	12	---	---	---	---	244
42	42	6	35	19	7/68	15	5.0	---	---	---	246
34	17	6	21;28	2	5/67	10	---	---	---	---	247
75	75	6	65	65	7/69	---	---	---	---	---	248
97	30	6	9;80	31	10/69	---	---	---	---	---	249
23	83	8	---	25	8/56	4	---	---	---	---	250
11	22	6	85	35	6/68	0.4	.004	---	---	---	251

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ litholog
Number	Lat-Long							
Cw- 253	4130-8028	Charles Croner	Lininger Drilling & Pumps	1968	H	1032	S	Mbe/st
255	4132-8011	Dickerson & Son	---	1968	H	1200	S	Msh/st
256	4133-8013	Clifton Adsit	Berkley D. Bossard	1969	P	1102	S	Mcu/ss
257	4130-8029	Gary Starr	R. E. Mohr Well Drilling	1970	H	1050	S	Mcu/ss
258	4130-8029	Dennis Floch	Lininger Drilling & Pumps	1960	H	1052	S	Mbe/st
259	4130-8029	Tony DeMarzo	do.	1960	H	1045	S	Mcu/ss
260	4130-8029	R. Bushyeager	do.	1965	H	1048	S	Mcu/ss
261	4130-8029	Julio Oannible	do.	1962	H	1045	S	Mcu/ss
262	4130-8011	G. W. Peterson	Berkley D. Bossard	1967	H	1362	S	Msl/ss
263	4134-8013	M. A. Bailey	do.	1967	H	1065	T	Qo/gr
264	4130-8029	Laura McDonough	Lininger Drilling & Pumps	1964	H	1044	S	Mcu/ss
265	4131-8011	Bruce Dygert	James R. Worley	1966	H	1262	S	Mm/sh
266	4131-8007	H. G. Hart	Moody Drilling Co., Inc.	1955	H	1130	S	Msh/st
268	4131-8008	John Kolcun	Berkley D. Bossard	1972	H	1195	S	Msh/st
270	4143-8011	P. E. Mook	Max Hickernell	1970	H	1272	S	Qo/gr
271	4129-8014	F. L. Sobolewski	Moody Drilling Co., Inc.	1956	H	1300	S	Msl/ss
272	4129-8017	Wayne Williams	do.	1964	H	1360	S	Po/ss
274	4144-8011	L. G. Perry	Max Hickernell	1970	H	1375	S	Mcu/ss
275	4140-8015	James Burger	do.	1970	H	1360	S	Msh/st
276	4143-8010	L. R. Porter	do.	1970	H	1250	S	Dco/sh
277	4142-8014	William Garton	do.	1970	H	1359	S	Msh/st
278	4144-8012	F. L. Sexton	Raymond L. Butterfield	1970	H	1170	S	Qo/sdgv
279	4143-8010	F. E. Wyman	Max Hickernell	1969	H	1220	S	Dco/st
280	4141-8009	W. E. Toboz	do.	1969	H	1135	S	Dco/st
281	4143-8009	G. E. Battles	Raymond L. Butterfield	1969	H	1350	S	Mcu/ss
282	4131-8008	R. D. Alabran	Moody Drilling Co., Inc.	1961	H	1145	S	Qo/gr
283	4144-8010	Lloyd Hall	Max Hickernell	1969	H	1202	S	Dco/st
284	4131-8008	W. P. Weaver	Moody Drilling Co., Inc.	1963	H	1132	S	Mo/sh
285	4144-8012	Raymond Hansen	Max Hickernell	1970	H	1175	S	Qo/gr
286	4140-8012	L. R. Foreman	do.	1970	H	1160	S	Dco/sh
287	4142-8012	H. H. Ridgeway	do.	1968	H	1196	S	Dco/sh
289	4143-8010	L. R. Porter	do.	1969	H	1245	S	Dco/sh
290	4142-8008	Howard Luikart	Raymond L. Butterfield	1969	H	1170	S	Dco/sh
291	4143-8009	Giles Dairy	Max Hickernell	1969	H	1133	S	Dco/sh
292	4144-8008	L. E. Lyle	do.	1969	H	1114	T	Dco/sh
293	4143-8016	S. Simonette Jr.	do.	1969	H	1352	S	Mcu/ss
294	4145-8014	John Kopanick	do.	1969	H	1135	S	Dco/sh
295	4131-8008	T. W. Steinbeck	Moody Drilling Co., Inc.	1963	H	1122	S	Mcu/ss
297	4131-8009	R. V. Peterson	---	1964	H	1300	S	Msl/ss
298	4143-8009	Saegertown Area Schools	Max Hickernell	1969	C	1288	S	Dco/sh
299	4131-8009	Carolyn Eldridge	Berkley D. Bossard	1969	H	1310	S	Msl/ss
300	4129-8026	Russell McConnell	Lininger Drilling & Pumps	1965	---	1109	S	Mcu/ss
301	4131-8010	G. W. Peterson	Max Hickernell	1965	H	1300	S	Msl/ss
302	4141-8015	Blanche Custead	do.	1968	H	1447	H	Msh/st
303	4142-8014	T. G. Eckart	do.	1968	H	1155	S	Dco/sh
304	4140-8012	L. D. Foreman	do.	1968	H	1170	S	Dco/sh
305	4143-8008	C. J. Baiera	do.	1968	H	1120	T	Dco/sh
306	4131-8011	Raymond Peterson	Moody Drilling Co., Inc.	1957	H	1312	S	Mm/sh
307	4131-8011	James Wise	do.	1954	H	1302	S	Msh/st
308	4143-8012	Richard Manross	Raymond L. Butterfield	1968	H	1290	S	Dco/sh
309	4141-8012	Arthur Ferguson	Max Hickernell	1968	H	1105	T	Qo/gr
310	4131-8009	J. T. Crooks	Berkley D. Bossard	1971	H	1278	S	Msl/st
311	4145-8010	D. R. Harrison	Raymond L. Butterfield	---	H	1298	S	Dco/sh
312	4141-8011	J. L. DeRita	Max Hickernell	1969	H	1350	S	Msh/sh
313	4131-8011	Hoagy Ranch	Moody Drilling Co., Inc.	1959	C	1285	H	Msl/ss
314	4142-8011	F. A. Lubresky	Max Hickernell	1968	H	1410	H	Msh/sh
315	4141-8009	R. S. Shumaker	do.	1968	H	1175	S	Dco/sh
317	4143-8014	Floyd Zimmer	do.	1968	H	1140	S	Dco/sh
318	4142-8009	R. M. Knuth	do.	1968	H	1200	S	Dco/st
319	4142-8008	Albert Rundel	Raymond L. Butterfield	1968	H	1102	S	Dco/sh
320	4141-8011	L. E. Dobson	Max Hickernell	1968	H	1200	S	Dco/sh
321	4129-8028	Lester McKay	Moody Drilling Co., Inc.	1951	U	1040	H	Mo/sh
323	4129-8027	Pa. Dept. of Forests and Waters	do.	1949	---	1012	S	Mcu/ss
324	4129-8027	do.	do.	1957	---	1019	S	Mbe/st
325	4131-8013	J. R. Sari	do.	1953	H	1312	S	Msl/ss
326	4140-8015	P. P. Yeager	Max Hickernell	1967	H	1390	S	Msh/st
327	4131-8015	Treeland Farms	Moody Drilling Co., Inc.	1963	H	1192	S	Qo/gr
330	4129-8026	Jamestown Mun. Auth.	---	1915	P	1105	S	Mo/ss
331	4129-8026	do.	R. W. Carroll	1936	P	1060	S	Mcu/ss
332	4128-8026	A. L. Sukalski	Moody Drilling Co., Inc.	1951	H	985	T	Qo/gr
333	4131-8015	Mary McArdle	Berkley D. Bossard	1970	---	1292	U	Qo/sdgv
334	4131-8015	F. I. McArdle	do.	1969	H	1285	S	Msh/st
335	4131-8016	C. H. Courtney	Lininger Drilling & Pumps	1969	H	1345	U	Msl/ss
336	4129-8027	Pa. Dept. of Forests and Waters	Moody Drilling Co., Inc.	1957	---	981	T	Mcu/ss
337	4142-8012	Earnest Pears	Max Hickernell	1967	H	1170	S	Dco/st

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otal epth elow and rface eet)	Casing		Oepth(s) to water-bearing zone(s) (feet)	5tatic water level		Reported yield (gpm)	5pecific capacity (gpm/ft)	Hard-ness (gpg)	5pecific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Oepth (feet)	Oiameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
55	27	7	---	16	3/68	20	1.4	---	---	---	Cw- 253
49	12	6	18;43	6	1/68	30	2.3	---	---	---	255
95	17	6	---	---	11/69	---	---	---	---	---	256
125	30	7	---	52	8/70	40	20	---	---	---	257
70	40	7	---	20	11/60	4	.40	---	---	---	258
100	25	7	---	38	8/60	8	.66	---	---	---	259
110	28	7	---	50	10/65	40	4.0	---	---	---	260
100	36	7	---	37	8/62	30	.70	---	---	---	261
65	47	6	20;47	24	7/67	40	2.5	---	---	---	262
63	63	6	12;57	2	6/67	30	1.7	---	---	---	263
108	35	6	---	32	9/64	12	.43	---	---	---	264
53	17	6	25;50	3	7/66	4	.18	6	240	---	265
38	28	8	---	15	7/55	20	---	---	---	---	266
85	48	6	29;81	56	8/72	50	4.5	---	---	---	268
118	118	6	---	52	8/70	20	---	---	---	---	270
63	22	7	---	18	7/56	6	---	---	---	---	271
107	39	6	41	16	11/64	15	.44	---	---	---	272
65	18	6	60	50	8/70	20	---	---	---	---	274
125	60	6	73;116	23	6/70	5	---	---	---	---	275
102	75	6	84	16	5/70	20	---	---	---	---	276
74	43	6	49;64	32	4/70	20	---	---	---	---	277
48	48	6	48	8	8/70	16	2.7	---	---	---	278
91	74	6	77;86	47	10/69	10	---	---	---	---	279
88	34	6	45;59;82	29	10/69	20	---	---	---	---	280
88	17	6	50;84	48	8/69	8	.36	---	---	---	281
35	35	8	---	30	11/61	20	---	---	---	---	282
50	33	6	41;47	9	11/69	10	---	---	---	---	283
48	48	6	42	10	10/63	10	.50	---	---	---	284
51	51	6	46	2	3/70	50	---	---	---	---	285
150	16	6	32;138	12	---	5	---	---	---	---	286
83	22	6	35;68	32	10/68	20	---	---	---	---	287
106	66	6	82;98	17	7/69	20	---	---	---	---	289
57	36	6	37	20	6/69	6	.22	---	---	---	290
90	60	8	68;84	33	6/69	15	---	---	---	---	291
29	---	6	22	6	6/69	10	---	---	---	---	292
132	14	6	122	95	5/69	12	---	---	---	---	293
60	34	8	48	---	---	10	---	---	---	---	294
79	55	6	50	40	11/63	6	.15	---	---	---	295
107	32	6	20;85	48	8/64	6	.22	---	---	---	297
200	32	8	80	10	1/69	19	---	---	---	---	298
32	21	6	---	18	4/69	20	10	---	---	---	299
260	24	12	---	45	1/65	60	2.3	---	---	---	300
30	33	7	40	23	12/65	20	---	---	---	---	301
98	43	6	51;68;84	20	11/68	20	---	---	---	---	302
71	29	6	67	35	9/68	20	---	---	---	---	303
89	22	6	65;85	35	8/68	10	---	---	---	---	304
70	52	6	64	25	8/68	12	---	---	---	---	305
120	101	6	---	42	10/57	10	---	---	---	---	305
135	88	7	---	---	---	15	---	---	---	---	307
46	22	6	25	20	7/68	1	.20	---	---	---	308
36	36	6	32	2	6/68	20	---	---	---	---	309
43	37	6	27	22	5/71	30	30	---	---	---	310
55	---	6	30	20	---	10	.67	---	---	---	311
78	41	6	52	16	6/69	9	---	---	---	---	312
70	39	6	---	15	11/59	20	---	26	1200	---	313
100	30	8	43;72;90	14	11/68	15	---	---	---	---	314
130	25	6	60;118	58	9/68	6	---	---	---	---	315
64	27	6	35;54	18	7/68	10	---	---	---	---	317
70	---	6	61;67	20	7/68	10	---	---	---	---	318
50	38	6	40;47	30	5/68	1	.10	---	---	---	319
125	26	8	65	16	5/68	2	---	---	---	---	320
34	20	7	---	7	4/65	0.1	---	---	---	---	321
70	48	7	---	15	12/49	20	1.3	---	---	---	323
75	21	6	---	34	12/57	10	---	---	---	---	324
65	24	7	---	16	7/53	10	---	---	---	---	325
108	38	6	40;74;91	15	9/67	30	---	---	---	---	326
95	95	8	---	47	11/63	14	.29	---	---	---	327
122	12	6	---	80	---	---	---	---	---	---	330
201	54	8	---	50	10/36	---	---	---	---	---	331
42	39	5	---	15	7/51	20	---	---	---	---	332
133	123	6	---	32	7/70	6	.13	---	---	---	333
225	153	6	155;212	44	11/69	6	.06	---	---	---	324
88	57	7	---	35	4/69	60	20	---	---	---	335
80	53	7	---	12	12/57	10	---	---	---	---	336
71	21	8	28;52;67	12	5/67	10	---	---	---	---	337

TABLE 6,

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ litholog
Number	Lat-Long							
Cw- 338	4131-8016	Charles Carl	Moody Drilling Co., Inc.	1959	H	1358	H	Msl/ss
339	4129-8027	Pa. Dept. of Forests and Waters	do.	1949	---	1020	H	Mbe/ss
340	4141-8009	George Wilson	Herbert G. Orr	1967	H	1110	S	Oco/sh
341	4131-8016	Allen Jacobs	Berkley O. Bossard	1973	H	1352	S	Po/ss
342	4129-8029	Robert Valesky	Lininger Drilling & Pumps	1951	H	1060	H	Msh/st
343	4140-8013	Earl Ebbert	Max Hickernell	1967	H	1165	S	Oco/sh
344	4140-8015	T. C. Larson	---	1966	H	1352	S	Qo/gr
345	4142-8012	Arden Dearborn	Max Hickernell	1966	H	1170	S	Oco/sh
346	4144-8008	Jon Fowler	do.	1966	H	1258	S	Qo/gr
347	4131-8017	O. E. Courtney	Lininger Drilling & Pumps	1971	H	1362	H	Msl/ss
348	4143-8010	C. A. Sanford	Max Hickernell	1966	H	1270	S	Oco/sh
349	4143-8010	Robert Schlosser	do.	1966	H	1252	S	Qo/gr
350	4131-8017	Lyle Horne	Lininger Drilling & Pumps	1960	H	1351	S	Msl/ss
351	4131-8018	Arlan Horne	Berkley O. Bossard	1972	H	1332	S	Po/ss
352	4131-8019	L. W. Horne	Moody Drilling Co., Inc.	1964	H	1162	S	Msh/st
353	4131-8019	East Fallowfield Sch.	Lininger Drilling & Pumps	1967	C	1242	S	Mcu/ss
354	4131-8019	Tony Greco	do.	1968	H	1218	S	Msh/st
355	4139-8025	Herman Brown	Max Hickernell	1970	H	1074	S	Oco/sh
356	4139-8025	Gordon Irons	do.	1970	H	1072	S	Oco/sh
357	4131-8019	R. W. Thomas	Moody Drilling Co., Inc.	1963	H	1275	S	Msh/st
358	4131-8020	Lloyd Gerber	R. E. Mohr Well Drilling	1968	H	1070	S	Mcu/---
359	4131-8020	Sam Mosca	Moody Drilling Co., Inc.	1963	S	1135	S	Mo/sh
360	4131-8021	Thomas McElhaney	do.	1952	H	1032	T	Mcu/ss
361	4135-8008	U. S. Geol. Survey	do.	1970	U	1068	T	Qo/sdgv
363	4131-8022	Mrs. M. Moore	Lininger Drilling & Pumps	1966	H	1045	S	Mbe/ss
365	4134-8029	E. Akuszeuski	Harland H. Knapp	1969	H	1096	H	Mbe/st
366	4133-8013	J. C. Hafer	Berkley O. Bossard	1973	H	1180	S	Msh/st
367	4135-8027	Charles Starr	Harland H. Knapp	1970	H	1148	H	Mbe/st
368	4136-8030	Gilbert Reiling	do.	1970	H	1021	S	Oco/sh
370	4136-8029	George Kasko	do.	1970	H	1025	S	Oco/sh
372	4137-8029	Ronald Mercadante	do.	1970	H	1038	H	Oco/st
373	4135-8027	Anthony Fragnoli	do.	1970	H	1150	S	Mcu/ss
374	4136-8029	Everett Allison	Max Hickernell	1963	H	1058	S	Mcu/---
376	4131-8025	Scott Harding	R. E. Mohr Well Drilling	1970	H	1320	S	Msl/ss
377	4131-8025	Girl Scouts of America	Moody Drilling Co., Inc.	1950	P	1312	S	Msl/ss
379	4131-8026	J. M. Loveridge	do.	1960	H	1262	S	Mm/sh
380	4131-8027	Robert Scott	Lininger Drilling & Pumps	1970	H	1165	S	Msh/st
381	4131-8028	Lillian Lazenby	Moody Drilling Co., Inc.	1960	H	1024	S	Mcu/ss
384	4131-8028	Charles Bennett	Lininger Drilling & Pumps	1967	H	1040	S	Qo/sdgv
386	4135-8009	T. W. Fox	Berkley O. Bossard	1969	H	1320	S	Mcu/ss
387	4138-8029	John Grubick	Charles R. Smith	1970	H	1022	S	Oco/st
388	4138-8029	Robert Kubec	do.	1970	H	1022	S	Oco/st
389	4131-8029	S. J. Heilman	R. E. Mohr Well Drilling	1966	H	1030	S	Mcu/ss
390	4134-8029	W. L. Emerick	Perl A. Litwiler	1966	H	1094	S	Mcu/ss
391	4131-8029	Pa. Dept. of Forests and Waters	Lininger Drilling & Pumps	1970	---	1012	S	Mcu/ss
393	4134-8028	H. Hudson	Harland H. Knapp	1969	H	1122	S	Mbe/st
395	4134-8028	Franklin Sadler	do.	1969	H	1110	S	Mbe/st
396	4135-8028	Arnold Workman	do.	1969	H	1112	S	Mcu/ss
397	4131-8030	Pa. Dept. of Forests and Waters	Lininger Drilling & Pumps	1967	P	1012	S	Mcu/ss
398	4132-8007	O. G. Crane	Max Hickernell	1961	H	1418	S	Msl/ss
399	4132-8008	Rev. R. Curry	Moody Drilling Co., Inc.	1948	H	1135	S	Mo/sh
400	4132-8010	Clyde McCraken	do.	1949	H	1120	S	Mcu/st
401	4142-8027	Robert Laird	Max Hickernell	1973	H	1158	S	Mcu/ss
402	4129-8015	Kebert Industrial Park	W. G. McDowell	1955	---	1272	S	Msl/ss
404	4141-8025	James Grafatin	Max Hickernell	1973	H	1105	S	Oco/sh
405	4136-8030	Eugene Bash	Ralph E. Robison	1967	H	1022	S	Oco/st
406	4132-8011	R. G. Fike	Moody Drilling Co., Inc.	1949	H	1287	S	Qo/gr
407	4141-8029	David Oskin	Thomas Stampin	1972	H	1020	S	Qo/gr
409	4129-8020	O. J. Byler, Sr.	Lininger Drilling & Pumps	1969	H	1055	S	Mcu/ss
410	4132-8011	W. P. Dickerson & Son Inc.	Berkley O. Bossard	1968	H	1120	S	Msh/st
411	4137-8030	Glen Hunt	Hazel B. Hollick	1967	H	1022	S	Oco/st
412	4129-8022	Gordon Sorber	R. E. Mohr Well Drilling	1967	H	1035	S	Mcu/ss
413	4135-8024	U. S. Geol. Survey	W. G. McDowell	1967	U	1110	H	Mcu/ss
414	4131-8026	Glenn Easter	Lininger Drilling & Pumps	1967	H	1272	S	Msh/st
415	4129-8026	Alan Oaks	R. E. Mohr Well Drilling	1967	H	1180	S	Msh/ss
416	4132-8012	Hartzel Crickbaum	Berkley O. Bossard	1969	H	1230	S	Msh/st
417	4129-8030	David Buchanon	R. E. Mohr Well Drilling	1967	H	1100	S	Msh/st
418	4129-8018	Leo Foulk	Lininger Drilling & Pumps	1967	H	1320	S	Msl/ss

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Total depth below land urface feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
63	63	7	---	5	4/59	60	---	---	---	---	Cw- 338
71	50	7	---	20	3/49	20	.80	---	---	---	339
64	29	7	40;59	25	5/67	---	---	---	---	---	340
64	54	6	51	22	5/73	14	.50	---	---	---	341
80	45	5	---	40	4/51	18	18	---	---	---	342
82	25	6	65;76	21	1/67	8	---	---	---	---	343
109	109	6	106	20	10/66	15	---	---	---	---	344
66	23	6	28;45;58	17	10/66	20	---	---	---	---	345
32	29	6	29	19	9/66	4	---	14	650	---	346
155	30	7	100;147	40	8/71	18	.16	---	---	---	347
118	44	7	---	11	8/66	3	---	---	---	---	348
122	122	8	119	---	7/66	40	---	---	---	---	349
115	68	8	---	40	11/60	9	.45	6	240	---	350
45	---	---	20	7	9/72	30	4.3	---	---	---	351
152	39	6	---	83	7/64	8	---	---	---	---	352
329	28	8	---	140	1/67	20	.17	---	---	---	353
105	24	7	---	65	10/68	18	.45	---	---	---	354
105	48	6	63;91	17	4/70	5	---	---	---	---	355
92	42	6	44	14	4/70	20	---	---	---	---	356
147	52	8	---	82	8/63	6	---	---	---	---	357
157	37	---	---	56	4/68	40	1.8	---	---	---	358
51	24	8	---	9	12/63	12	.28	---	---	---	359
95	64	7	---	14	8/52	20	1.2	---	---	---	360
425	110	8	91	8	1/70	50	25	---	---	---	361
64	---	7	---	---	---	---	---	---	---	---	363
75	24	6	68	55	10/69	8	.62	---	---	---	365
92	26	6	32;40;50;56;81	19	5/73	10	.13	---	---	---	366
63	18	6	42;55	2	3/70	25	3.1	---	---	---	367
63	31	7	37;58	12	2/70	6	.14	---	---	---	368
60	---	6	42;53	8	5/70	---	---	---	---	---	370
61	26	6	32;58	3	6/70	25	---	---	---	---	372
105	18	7	24;98	75	7/70	12	---	---	---	---	373
68	40	6	---	16	8/63	20	---	---	---	---	374
70	24	7	---	20	8/70	50	10	---	---	---	376
85	24	7	---	37	1/50	25	8.0	---	---	---	377
90	30	6	---	30	10/60	10	---	6	600	---	379
75	35	7	---	18	6/70	20	.35	---	---	---	380
102	53	8	---	12	10/60	60	---	---	---	---	381
145	145	7	---	45	11/67	3	.06	---	---	---	384
186	162	6	129	---	---	16	---	---	---	---	386
73	15	6	56	5	9/70	14	.32	---	---	---	387
62	26	6	30;55	8	10/70	11	.23	---	---	---	388
90	32	7	---	35	9/66	15	.75	---	---	---	389
80	30	7	60	58	7/66	20	3.0	---	---	---	390
78	32	7	---	8	2/70	15	7.5	---	---	---	391
66	24	6	36;60	15	7/69	7	.16	---	---	---	393
67	31	6	38;58	12	7/69	30	---	---	---	---	395
75	29	6	20;68	50	3/69	30	---	---	---	---	396
110	57	8	---	6	1/67	85	8.5	---	---	---	397
70	45	7	48;60	30	9/61	30	2.0	---	---	---	398
72	13	6	---	8	12/48	2	.03	5	360	---	399
71	16	5	---	50	11/49	8	---	---	---	---	400
60	32	6	12	---	5/73	40	---	---	---	---	401
62	48	7	---	14	1955	60	---	---	---	---	402
115	42	6	61;94	---	---	20	---	---	---	---	404
72	22	7	---	6	5/67	10	.71	---	---	---	405
161	161	7	---	70	10/49	14	1.4	---	---	---	406
36	36	6	29	4	9/72	7	.28	---	---	---	407
150	32	7	---	35	5/69	25	.62	---	---	---	409
49	12	6	18	7	1/68	30	2.3	---	---	---	410
59	26	6	38;05	4	10/67	11	.23	---	---	---	411
170	23	7	---	33	5/67	40	.74	---	---	---	412
100	19	7	19;32	46	5/67	14	1.0	---	---	---	413
114	34	7	---	25	11/67	5	.06	---	---	---	414
130	---	7	115;117	96	11/67	25	.74	---	---	---	415
75	27	6	26;49	18	4/69	25	.62	---	---	---	416
58	20	7	---	18	11/67	40	40	---	---	---	417
112	50	7	---	50	1967	15	.24	---	---	---	418

TABLE 6,

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ litholog
Number	Lat-Long							
Cw- 419	4129-8018	Frederick Williams	Lininger Drilling & Pumps	1960	H	1340	S	Msl/ss
420	4129-8019	J. K. Lee	do.	1958	H	1260	S	Msl/ss
421	4135-8029	George Dull	Hazel B. Hollick	1967	H	1036	S	Mcu/ss
422	4134-8029	Frank Adams	do.	1967	H	1078	S	Mcu/ss
424	4132-8015	Charles Lowther	Berkley D. Bossard	1971	H	1270	S	Qo/gr
425	4133-8029	W. E. Weston	do.	1967	H	1035	S	Dco/sh
426	4136-8029	Arnold Paladini	Hazel B. Hollick	1966	H	1040	S	Dco/st
427	4136-8026	F. S. Bennett	Perl A. Litwiler	1966	H	1080	S	Mcu/ss
428	4132-8016	R. A. Kiskadden	Moody Drilling Co., Inc.	1955	H	1320	H	Msl/ss
429	4132-8017	Crawford Co. Community Action	Max Hickernell	1972	H	1315	S	Msl/st
430	4138-8029	Steve Andrews	Ralph E. Robison	1966	H	1025	S	Oco/st
431	4136-8026	R. L. Staab	Max Hickernell	1967	H	1065	S	Mcu/ss
432	4135-8027	Earl Hendershot	Harland H. Knapp	1969	H	1146	S	Mbd/sh
433	4129-8020	L. E. Pfaff	R. E. Mohr Well Drilling	1968	H	1130	S	Msh/ss
434	4129-8022	Robert Sorber	do.	1969	H	1295	S	Msl/ss
435	4129-8018	Fred Foulk	Lininger Drilling & Pumps	1959	S	1310	S	Msl/ss
436	4129-8017	R. J. Mowery	---	---	H	1398	U	---
437	4133-8017	Paul Morian	Thomas Stampin	1972	H	1260	S	Mm/sh
438	4132-8028	Paul Jones	Harland H. Knapp	1969	H	1085	S	Mbe/st
439	4132-8028	Rudolph Jellison	do.	1969	H	1038	S	Mcu/ss
440	4135-8028	Michael Cibery	do.	1969	H	1102	S	Mcu/ss
441	4135-8027	James Butcher	do.	1969	H	1148	S	Mbe/ss
442	4132-8017	R. C. Elder	Moody Drilling Co., Inc.	1955	H	1305	S	Msl/ss
443	4132-8018	Thomas McIntire	Lininger Drilling & Pumps	1961	H	1309	S	Msl/ss
444	4135-8028	Ellsworth Austin	Harland H. Knapp	1969	H	1114	S	Mcu/ss
445	4132-8020	T. A. Shearer	Moody Drilling Co., Inc.	1957	H	1192	H	Msh/st
446	4131-8028	C. V. Jones	Lininger Drilling & Pumps	1970	H	1048	S	Qo/sdgv
447	413 -8027	Joe Kohler	Harland H. Knapp	1968	H	1142	S	Mcu/ss
448	4132-8020	J. W. Royal	Moody Drilling Co., Inc.	---	H	1165	S	Msh/st
449	4134-8029	Ernest Wargo	Harland H. Knapp	1968	H	1080	S	Mcu/ss
451	4135-8027	Henry Thistlewood	do.	1968	H	1132	S	Mbd/sh
452	4135-8028	William Frank	do.	1968	H	1102	S	Mcu/ss
454	4132-8021	W. B. Vincent	Max Hickernell	1965	H	1030	S	Qo/gr
455	4132-8022	Elmer Marburger	R. E. Mohr Well Drilling	1966	H	1066	S	Mcu/ss
456	4132-8022	Jack Beard	Lininger Drilling & Pumps	1965	H	1048	S	Mcu/ss
457	4132-8022	A. L. Clark	Moody Drilling Co., Inc.	1951	H	1031	T	Mcu/ss
458	4132-8022	Istvan Sallee	do.	1952	H	1035	T	Mcu/ss
459	4132-8022	Pennsylvania Power Co.	Lininger Drilling & Pumps	1962	C	1040	T	Mcu/ss
460	4132-8022	Rocco Garnet	Moody Drilling Co., Inc.	1952	H	1032	S	Mcu/ss
461	4132-8023	Stanley Deezik	R. E. Mohr Well Drilling	1966	H	1208	S	Msh/st
462	4132-8023	Gary New	Moody Drilling Co., Inc.	1949	H	1217	S	Msh/st
463	4132-8023	Patrick Annadano	Lininger Drilling & Pumps	1966	H	1220	S	Msh/st
464	4132-8023	Howard Carr	R. E. Mohr Well Drilling	1968	H	1210	S	Msh/st
465	4132-8023	Kenneth Baker	Moody Drilling Co., Inc.	1949	H	1178	S	Msh/st
466	4132-8024	O. J. Reaugh	do.	1949	H	1250	S	Msh/st
467	4132-8027	Donald Andre	Lininger Drilling & Pumps	---	H	1203	S	Mcu/st
468	4132-8027	Clifford Seibel	do.	1962	H	1175	S	Msh/st
469	4132-8028	J. M. Hoban	do.	1967	H	1022	S	Mcu/ss
470	4132-8028	P. D. Graham	do.	1969	H	1100	S	Mcu/ss
472	4132-8029	A. J. Henderson	do.	1963	H	1030	S	Mcu/---
473	4132-8029	Clifford Snodgrass	Moody Drilling Co., Inc.	1964	H	1030	S	Mcu/ss
474	4133-8007	Lynn Ehrgott	Berkley D. Bossard	1972	H	1450	S	Msl/ss
475	4133-8008	Wallace Huber	Max Hickernell	1961	H	1465	H	Msl/st
476	4139-8023	C. M. Heidelberg	do.	1969	H	1144	S	Mcu/ss
477	4139-8024	W. B. Gehr	do.	1969	H	1098	S	Dco/st
478	4133-8009	Richard Sidler	---	1965	H	1438	H	Msl/st
479	4140-8028	John Grant	Berkley D. Bossard	1970	H	1050	S	Dco/sh
480	4142-8025	Adam Petrie	do.	1970	H	1172	H	Mcu/ss
483	4133-8009	B. H. Spencer	Max Hickernell	1972	H	1440	H	Msl/ss
484	4133-8009	C. H. Butchek	Moody Drilling Co., Inc.	1951	H	1432	S	Msl/ss
485	4133-8010	W. P. Dickerson & Son Inc.	Berkley D. Bossard	1968	U	1105	S	Mcu/st
486	4133-8010	Frank Smock	Moody Drilling Co., Inc.	1950	H	1152	S	Mo/sh
487	4133-8027	Jack Hoffman	Berkley D. Bossard	1970	H	1115	S	Mcu/ss
489	4133-8011	Donald Hank	Moody Drilling Co., Inc.	1961	H	1102	S	Mcu/st
490	4140-8025	Claude Ray	Berkley D. Bossard	1970	H	1070	S	Dco/st
492	4133-8012	E. M. Wood	Moody Drilling Co., Inc.	1965	H	1240	S	Msh/st
493	4141-8030	Donley Smith	Berkley D. Bossard	1968	H	1032	S	Qo/gr
494	4133-8012	L. W. Mumford	Moody Drilling Co., Inc.	1950	H	1130	S	Msh/st
495	4140-8027	Gary Oates	Max Hickernell	1967	H	1132	S	Mcu/ss
500	4139-8026	C. W. DeBow	do.	1967	H	1090	S	Oco/st
501	4133-8013	C. L. Pardee	Moody Drilling Co., Inc.	1956	H	1168	S	Msh/st
502	4140-8028	Robert Collins	Berkley D. Bossard	1967	H	1168	S	Mcu/ss

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otal lepth elow and irface eet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
130	41	7	---	78	7/60	30	4.3	---	---	---	Cw- 419
89	31	7	---	40	9/58	30	1.5	---	---	---	420
69	27	6	41;62	10	8/67	9	.21	---	---	---	421
75	16	6	53;68	48	8/67	---	---	---	---	---	422
100	100	6	93	26	8/71	4	.06	---	---	---	424
51	29	6	---	9	8/67	7	.70	---	---	---	425
49	27	6	42;49	8	6/66	14	---	---	---	---	426
65	49	7	50	30	7/66	20	4.0	---	---	---	427
61	42	7	---	20	6/55	30	---	---	---	---	428
48	27	6	32;44	F	8/72	20	---	---	---	---	429
48	21	6	25;38	6	8/66	25	1.8	---	---	---	430
56	44	8	39;45	12	4/67	20	---	6	280	---	431
56	23	6	30;50	4	6/69	30	---	---	---	---	432
120	34	7	---	95	5/68	40	40	---	---	---	433
95	35	7	---	55	6/69	8	.32	---	---	---	434
108	31	8	---	39	12/59	7	.64	---	---	---	435
95	29	6	---	40	---	12	.40	---	---	---	436
83	30	6	27	15	10/72	5	.09	---	---	---	437
65	25	6	35;58	10	5/69	15	.75	---	---	---	438
60	35	6	35;50	12	4/69	25	1.1	---	---	---	439
60	23	6	35;55	6	4/69	30	---	---	---	---	440
56	18	6	---	2	4/69	60	---	---	---	---	441
100	72	7	---	17	10/55	11	---	---	---	---	442
130	17	7	---	35	11/61	16	.17	---	---	---	443
62	27	6	30;55	20	3/69	25	1.2	---	---	---	444
96	18	8	---	16	9/57	30	---	---	---	---	445
170	170	7	---	40	8/70	4	.03	---	---	---	446
93	11	6	75;88	58	10/68	7	.26	---	---	---	447
190	22	---	---	60	3/55	1	---	---	---	---	448
80	17	6	60;70	50	10/68	20	2.0	---	---	---	449
57	21	6	35;52	20	9/68	6	.20	---	---	---	451
75	20	6	15;68	40	9/68	30	30	---	---	---	452
52	52	6	49	12	9/65	5	---	---	---	---	454
168	27	7	---	55	6/66	40	.89	---	---	---	455
112	46	7	---	40	8/65	30	.66	---	---	---	456
67	50	7	---	14	6/51	20	---	---	---	---	457
80	59	7	---	8	8/52	50	---	---	---	---	458
92	32	7	---	18	2/62	45	22	---	---	---	459
82	38	7	---	10	3/52	20	---	---	---	---	460
84	20	8	---	18	6/66	12	1.0	---	---	---	461
45	14	5	---	18	8/49	8	.53	---	---	---	462
103	32	7	---	33	10/66	8	.11	---	---	---	463
77	23	7	---	22	4/68	15	1.9	---	---	---	464
50	16	7	46;8	15	11/49	8	---	---	---	---	465
78	26	5	---	30	8/49	5	.11	---	---	---	466
100	28	7	---	38	7/65	8	.36	---	---	---	467
78	26	7	---	30	12/62	30	1.5	---	---	---	468
65	32	7	---	20	6/67	60	---	---	---	---	469
115	32	7	---	40	6/69	8	.21	---	---	---	470
90	38	7	---	27	8/63	10	.43	---	---	---	472
64	46	6	30	15	5/64	20	.80	---	---	---	473
60	55	6	48;53	16	5/72	40	1.7	---	---	---	474
80	32	7	50;65	42	9/61	10	.26	---	---	---	475
97	38	7	60	48	---	20	---	---	---	---	476
97	79	6	92	17	12/69	25	---	---	---	---	477
90	63	7	45	27	12/65	10	---	---	---	---	478
80	79	6	60	40	3/70	3	.08	---	---	---	479
64	51	6	25	10	3/70	30	6.0	---	---	---	480
70	40	6	50;60;65	33	8/72	20	---	---	---	---	483
26	23	7	---	14	10/51	20	---	---	---	---	484
52	25	6	20;42	8	9/68	30	3.0	---	---	---	485
114	18	7	---	70	6/50	4	---	---	---	---	486
53	38	6	17	17	7/70	4	.25	---	---	---	487
90	50	6	---	30	7/61	20	---	---	---	---	489
45	41	6	38	20	8/70	35	7.0	---	---	---	490
241	26	6	90	88	6/65	2	1.0	---	---	---	492
39	39	6	30;35	12	2/68	15	3.8	---	---	---	493
40	11	6	---	12	12/50	3	---	---	---	---	494
66	54	6	58	6	6/67	15	---	---	---	---	495
76	26	6	56;71	18	1/67	6	---	---	---	---	500
50	21	---	---	23	2/56	15	---	---	---	---	501
30	26	6	23	10	10/67	8	.80	---	---	---	502

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer litholo
Number	Lat-Long							
Cw- 503	4133-8013	Greenwood Elem. Sch.	Moody Drilling Co., Inc.	1954	C	1130	S	Mcu/ss
504	4143-8027	I. L. Horner	Berkley D. Bossard	1968	H	1155	S	Mcu/ss
507	4140-8028	Emil Haboustak	Max Hickernell	1968	H	1042	S	Dco/sh
508	4129-8008	E. H. Schlabach	W. G. McDowell	1954	H	1420	S	Po/ss
509	4128-8009	Theodore Peterson	do.	1947	H	1392	H	Msl/ss
510	4128-8011	W. J. Temple	do.	1948	H	1322	S	Msl/ss
511	4129-8008	Wesleyan Ch.	do.	1967	H	1435	S	Msl/ss
512	4139-8027	Harvey Hogan	Berkley D. Bossard	1968	H	1048	S	Dco/ss
513	4133-8014	Andy Slozat	do.	1969	H	1168	S	Msh/st
514	4133-8014	Lyle Adsit	do.	1971	H	1120	S	Mcu/ss
515	4133-8016	H. W. Wood	Max Hickernell	1972	H	1190	S	Qo/sdgv
516	4133-8016	T. M. Murray	Moody Drilling Co., Inc.	1957	H	1188	S	Qo/sdgv
517	4133-8016	R. J. Harrison	Berkley D. Bossard	1971	H	1230	S	Msh/st
518	4133-8016	Paul Dygert	Moody Drilling Co., Inc.	1957	H	1150	S	Qo/sdgv
519	4133-8018	R. E. Sperry	Lininger Drilling & Pumps	1970	H	1308	S	Msh/st
520	4133-8018	Weber and Wendell	Berkley D. Bossard	1971	H	1300	S	Msl/ss
521	4133-8018	Charlotte Kaintz	do.	1970	H	1300	S	Msl/ss
522	4133-8019	V. R. Hunter	Moody Drilling Co., Inc.	1952	H	1262	S	Mm/st
523	4133-8020	Atlas Sand and Gravel Inc.	Lininger Drilling & Pumps	1971	N	1235	D	Qo/sdgv
524	4133-8021	Neal Miller	Moody Drilling Co., Inc.	1951	H	1070	S	Qo/gr
525	4133-8021	O. C. Morian	do.	1953	H	1095	S	Mbe/st
526	4133-8022	V. P. Deezik	do.	1964	P	1030	T	Qo/sdgv
528	4133-8022	Hartstown Fire Dept.	do.	1959	H	1036	S	Qo/gr
529	4133-8022	James Sayles	Lininger Drilling & Pumps	1971	H	1050	S	Mcu/ss
530	4129-8010	H. R. Gilligan	Berkley D. Bossard	1971	H	1360	S	Msl/ss
531	4133-8022	G. W. Christie	Moody Drilling Co., Inc.	1966	H	1040	S	Mcu/ss
532	4133-8022	M. I. Christie	do.	1949	H	1058	S	Mbd/st
533	4133-8023	E. A. Howard	Lininger Drilling & Pumps	1960	H	1130	S	Mbe/st
534	4133-8024	F. W. Philbrick	do.	---	H	1202	S	Msh/st
535	4133-8026	United Campgrounds Inc.	Max Hickernell	1972	P	1238	S	Mcu/ss
536	4133-8027	Stanley McElhaney	Lininger Drilling & Pumps	1961	H	1192	S	Mbe/st
537	4133-8027	Carl Hurlbert	do.	1960	H	1200	S	Mo/sh
538	4133-8027	Leroy Saxton	Moody Drilling Co., Inc.	1955	H	1212	S	Msh/st
540	4133-8028	C. E. Daugherty	Max Hickernell	1963	H	1105	S	Mbe/st
541	4133-8028	A. J. Miller	do.	1963	H	1105	S	Mbe/st
542	4133-8029	Karl Rupnik	Lininger Drilling & Pumps	1968	H	1020	S	Mcu/ss
543	4133-8029	Hucke and Quinlan	Moody Drilling Co., Inc.	1964	H	1045	S	Mcu/ss
545	4133-8029	Harley Fletcher	---	1962	H	1035	S	Mcu/ss
546	4133-8029	Edward Shuba	Lininger Drilling & Pumps	1961	H	1028	S	Mcu/ss
547	4133-8029	Fred Weidler	Max Hickernell	1963	H	1047	S	Mcu/ss
548	4133-8029	Peter Matwiczyk	---	---	H	1060	S	Mcu/ss
549	4133-8029	Melvin Cruder	Lininger Drilling & Pumps	1967	H	1062	S	Mbd/sh
550	4133-8029	T. J. Murphy	do.	---	H	1040	S	Mcu/st
552	4133-8030	H. G. Zacherl	do.	1961	H	1035	S	Mcu/ss
553	4134-8007	David Pierce	Max Hickernell	1962	H	1122	S	Qo/gr
554	4134-8008	Gary Ketcham	do.	1972	H	1432	S	Msl/ss
555	4134-8008	Rev. O. A. King	do.	1972	H	1412	S	Msl/st
556	4134-8009	Arden Porter	Moody Drilling Co., Inc.	1952	H	1412	S	Msl/st
557	4134-8009	H. J. Rekas	do.	1964	H	1255	S	Mcu/ss
558	4134-8009	Kenneth Van Skike	do.	1966	H	1190	S	Dco/sh
559	4134-8009	Paul Ehrgott	Berkley D. Bossard	1967	H	1170	S	Dco/ss
560	4134-8011	J. H. Nickerson	Moody Drilling Co., Inc.	1949	H	1228	S	Msh/st
561	4134-8011	Frank Simmons	Berkley D. Bossard	1969	H	1203	S	Mcu/ss
562	4134-8011	C. A. Lybarger	Moody Drilling Co., Inc.	1954	H	1110	S	Dco/st
563	4134-8011	Robert Boyd	do.	1956	H	1195	S	Mcu/ss
564	4134-8011	R. C. Boyd	do.	1955	H	1119	S	Dco/st
565	4134-8011	D. T. Raysor	Max Hickernell	1964	H	1110	S	Dco/st
566	4134-8011	Nina DeGroodt	Moody Drilling Do., Inc.	1950	H	1137	S	Dco/sh
567	4134-8011	The Evergreens	do.	1964	C	1135	S	Qo/s
568	4134-8011	Mike Krolikowski	do.	1950	H	1135	S	Dco/st
569	4134-8012	R. J. Shiner	do.	1955	H	1068	T	Qo/sdgv
570	4134-8013	J. A. Riley	Max Hickernell	1961	H	1079	T	Mcu/st
571	4138-8023	T. L. McCauley	do.	1969	H	1062	S	Qo/gr
572	4137-8021	R. G. Oliver	Berkley D. Bossard	1969	H	1165	S	Mcu/ss
573	4135-8009	Ezra Hall	Moody Drilling Co., Inc.	1957	H	1090	T	Qo/gr
575	4134-8013	Robert Hall	Berkley D. Bossard	1972	H	1074	T	Mcu/st
576	4134-8015	Robert Hollabaugh	Max Hickernell	1961	H	1130	S	Mo/sh
577	4134-8016	R. G. Slozat	Moody Drilling Co., Inc.	1954	H	1118	S	Mo/st
578	4134-8016	D. A. Dennis	Max Hickernell	1963	H	1121	S	Mo/sh
579	4134-8016	Leo McMichael	do.	1963	S	1082	T	Qo/sdgv
580	4133-8018	K. H. Smithman	Berkley D. Bossard	1970	H	1304	S	Mm/st
581	4136-8015	Raymond Kazebee	do.	1970	H	1140	S	Qo/gr

(CONTINUED)

Total depth below land urface feet)	Casing		Depth(s) to water-bearing zone(s) (feet)			Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
115	26	7	---	15	1954	E	---	---	---	---	Cw- 503
72	40	6	65	24	8/68	12	.39	---	---	---	504
53	29	7	36;48	8	8/68	15	---	---	---	---	507
50	45	6	---	25	1954	50	50	---	---	---	508
70	60	5	---	22	1947	20	2.0	---	---	---	509
66	32	---	---	24	1948	30	---	---	---	---	510
83	44	7	---	33	5/67	40	---	---	---	---	511
63	51	6	45	34	6/68	6	.40	---	---	---	512
75	44	6	---	29	11/69	35	1.7	---	---	---	513
86	---	6	---	13	9/71	20	.35	---	---	---	514
87	87	6	---	10	5/72	20	---	---	---	---	515
70	70	6	---	35	7/57	2	---	---	---	---	516
75	64	6	---	---	10/71	35	---	---	---	---	517
61	61	8	---	30	9/57	20	---	---	---	---	518
185	75	7	---	61	1970	12	.31	---	---	---	519
42	21	6	23	16	7/71	14	1.2	---	---	---	520
61	20	6	39;50	16	3/70	25	1.0	---	---	---	521
70	29	8	---	9	3/52	7	---	---	---	---	522
113	60	8	---	12	5/71	45	---	---	---	---	523
67	67	7	---	52	4/51	20	---	---	---	---	524
93	48	7	---	40	12/53	20	---	---	---	---	525
61	61	6	---	14	9/64	30	3.3	---	---	---	526
63	63	7	---	20	3/59	15	---	---	---	---	528
100	62	7	---	46	12/71	18	.33	---	---	---	529
52	45	6	40	7	6/71	12	1.0	---	---	---	530
82	38	6	52	16	4/66	20	.30	---	---	---	531
60	37	5	---	30	11/49	20	2.0	10	500	---	532
137	41	7	---	70	4/60	12	.66	---	---	---	533
65	40	7	---	4	6/63	14	.58	---	---	---	534
302	25	8	---	15	11/72	40	1.3	11	560	---	535
75	20	7	---	38	8/61	10	.83	---	---	---	536
87	33	7	---	38	9/60	6	.50	---	---	---	537
62	28	8	---	20	7/55	20	---	---	---	---	538
57	23	6	---	6	5/63	8	.16	---	---	---	540
62	32	6	34;48	5	6/63	20	.57	---	---	---	541
67	44	7	---	6	7/68	40	6.6	---	---	---	542
63	33	6	40	15	6/64	10	.21	---	---	---	543
78	44	6	---	13	9/62	---	---	---	---	---	545
50	24	7	---	14	10/61	40	40	---	---	---	546
72	27	6	---	3	---	30	.94	---	---	---	547
60	33	---	---	5	---	12	---	---	---	---	548
65	21	7	---	15	8/67	7	.47	---	---	---	549
60	28	6	---	20	8/68	10	.25	---	---	---	550
70	18	7	---	27	9/61	40	3.1	---	---	---	552
145	145	7	139	40	5/62	10	---	---	---	---	553
53	34	6	38;47	20	8/72	15	.75	---	---	---	554
63	35	6	58	22	5/72	10	---	---	---	---	555
65	15	7	---	25	12/52	15	---	---	---	---	556
122	21	6	20;100	70	8/64	10	.27	---	---	---	557
187	36	6	80	---	---	5	---	---	---	---	558
151	27	6	32;138	32	4/67	6	.06	---	---	---	559
70	25	7	---	30	10/49	8	---	---	---	---	560
112	30	6	---	78	6/69	15	15	---	---	---	561
42	20	7	---	20	8/54	6	---	---	---	---	562
100	26	8	---	53	6/56	20	---	---	---	---	563
134	107	7	---	20	3/55	6	---	---	---	---	564
118	92	6	101;108	7	8/64	2	---	---	---	---	565
104	94	7	---	20	8/50	4	---	---	---	---	566
58	58	6	---	13	3/64	20	1.2	---	---	---	567
130	128	7	---	25	6/50	12	---	---	---	---	568
105	105	6	---	10	12/55	30	---	---	---	---	569
42	27	7	---	5	9/61	15	.40	---	---	---	570
150	150	6	142	50	9/69	10	---	---	---	---	571
136	66	6	50;102	98	10/69	18	.82	---	---	---	572
75	75	7	---	14	10/57	7	---	---	---	---	573
52	52	6	48	16	9/72	20	1.2	---	---	---	575
70	17	7	35	14	1/61	2	.04	---	---	---	576
48	19	7	---	10	3/54	6	---	---	---	---	577
55	26	6	28;43	10	4/63	---	1.0	---	---	---	578
68	68	6	63	5	6/63	12	1.2	---	---	---	579
79	21	6	28;57	18	5/70	20	.38	---	---	---	580
68	68	6	58	2	5/70	16	.28	---	---	---	581

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ litholog
Number	Lat-Long							
Cw- 582	4138-8020	D. E. Funkhauser	Berkley D. Bossard	1970	P	1122	H	Dco/st
583	4138-8020	Sid Hill	Max Hickernell	1970	H	1092	T	Dco/sh
584	4134-8017	J. M. Andrews	Moody Drilling Co., Inc.	1947	H	1120	S	Mbe/st
586	4137-8019	R. K. McKinsey	Max Hickernell	1970	H	1088	T	Dco/sh
587	4134-8018	A. W. Mellon	Moody Drilling Co., Inc.	1953	H	1270	S	Mm/st
588	4134-8019	Dewey Mushrush	do.	1950	H	1283	S	Msl/ss
589	4135-8019	Motovation, Inc.	Max Hickernell	1970	H	1288	H	Msh/st
590	4134-8020	T. E. Grove	do.	1963	H	1220	S	Msh/st
592	4138-8018	Richard House	do.	1970	H	1080	T	Qo/gr
594	4139-8017	W. E. Gibson	do.	1970	H	1220	S	Qo/gr
595	4134-8020	J. M. Thompson	Moody Drilling Co., Inc.	1950	H	1251	S	Msh/st
596	4139-8022	E. C. Watson	Max Hickernell	1970	H	1230	S	Qo/gr
598	4134-8020	E. D. Probst	Moody Drilling Co., Inc.	---	H	1272	S	Msh/st
599	4138-8020	Earl Burton	Berkley D. Bossard	1969	H	1088	T	Dco/ss
600	4134-8021	Art Keppel	Moody Drilling Co., Inc.	1950	H	1105	S	Mbe/st
601	4134-8021	D. C. Burchfield	Berkley D. Bossard	1967	H	1260	H	Qo/gr
602	4134-8021	A. J. Szabo	Moody Drilling Co., Inc.	1956	H	1090	S	Mcu/ss
603	4136-8019	Homer Ewing	Berkley D. Bossard	1968	H	1185	S	Mcu/ss
604	4137-8020	Norman Grieser	Max Hickernell	1969	H	1085	S	Qo/gr
605	4134-8023	Otto Klink	Moody Drilling Co., Inc.	1951	H	1050	S	Mcu/st
606	4134-8023	G. D. Brooks	do.	1951	H	1093	S	Mbe/st
607	4138-8018	Jowin Trailer Villa	Berkley D. Bossard	1968	P	1078	T	Qo/sdgv
608	4135-8015	W. B. Weber	Moody Drilling Co., Inc.	1947	H	1302	H	Msh/st
609	4134-8023	W. H. Cook	do.	1957	H	1092	S	Mcu/ss
610	4134-8023	Paul Bauer	do.	1955	H	1075	S	Mcu/ss
611	4134-8026	Lavier Livingston	do.	1952	H	1228	S	Msh/st
612	4134-8028	William Toth	Lininger Drilling & Pumps	1970	H	1109	S	Mbe/st
613	4134-8028	Joseph Buksa	do.	1972	H	1115	S	Mbe/st
615	4134-8028	John Fontanesi	Max Hickernell	1963	H	1123	S	Mcu/ss
616	4134-8029	Peter Colluro	do.	---	H	1080	S	Mbe/st
617	4134-8029	Andrew Smith	Lininger Drilling & Pumps	1969	H	1080	S	Mbe/st
618	4134-8029	Ralph Blackstock	Moody Drilling Co., Inc.	1964	H	1091	S	Mbe/st
619	4134-8029	R. L. Preztak	do.	1964	H	1120	H	Mbe/ss
620	4134-8029	John Piatt	Max Hickernell	1963	H	1105	S	Mbe/ss
622	4137-8019	Gordon Murdock	do.	1966	H	1078	T	Qo/gr
623	4134-8029	John Conti	Moody Drilling Co., Inc.	1964	H	1095	S	Mcu/ss
624	4137-8020	W. A. Garvin	Max Hickernell	1966	H	1212	S	Mbe/st
625	4135-8019	Alex Tokarcik	do.	1966	H	1282	S	Msh/st
626	4137-8017	John Hamilton	do.	1966	H	1105	T	Dco/sh
628	4134-8029	William Tressler	Lininger Drilling & Pumps	1970	H	1093	S	Mbd/st
629	4134-8029	George Cutseries	do.	1970	H	1107	S	Mcu/st
630	4134-8029	Mrs. W. Krohe	Berkley D. Bossard	1967	H	1088	S	Mcu/ss
631	4136-8017	G. E. Cooper	Max Hickernell	1967	H	1080	T	Qo/gr
632	4134-8021	Frank Porter	do.	1967	H	1088	T	Mcu/ss
634	4136-8020	Mike Chir, Jr.	do.	1967	H	1190	S	Mbe/st
635	4134-8029	W. S. Cavanaugh	Moody Drilling Co., Inc.	1964	H	1098	S	Mcu/ss
636	4134-8030	E. Bartel, Jr.	do.	1964	H	1052	S	Mcu/ss
637	4136-8017	S. J. Wojsiat	Max Hickernell	1969	H	1088	T	Qo/gr
638	4135-8007	J. R. Peters	do.	1966	H	1115	S	Dco/sh
640	4137-8020	L. E. Taylor	do.	1968	H	1160	S	Mcu/ss
641	4138-8017	B. F. Klingensmith	do.	1968	H	1262	H	Msh/st
642	4135-8007	Arthur Karn	Moody Drilling Co., Inc.	1948	H	1110	S	Dco/st
643	4136-8020	Vern Abbott	Berkley D. Bossard	1968	H	1180	S	Mbe/ss
644	4135-8007	L. E. Powell	do.	1969	H	1118	S	Dco/st
645	4138-8017	E. V. Tessmer	Max Hickernell	1968	H	1252	H	Mcu/ss
646	4138-8019	William Bridge	Berkley D. Bossard	1968	H	1120	S	Dco/sh
647	4138-8019	Ann McLaughlin	do.	1967	H	1098	T	Dco/sh
648	4136-8019	Daniel Warren	do.	1968	H	1195	S	Mcu/ss
649	4138-8020	Donald Cready	do.	1968	H	1095	T	Dco/sh
650	4136-8017	Bud Miller	do.	1968	H	1078	T	Qo/sdgv
651	4135-8007	H. E. Collins	Max Hickernell	1964	H	1410	S	Msh/st
652	4135-8007	H. L. Mehring	do.	1966	H	1408	S	Mm/sh
653	4135-8008	Paul Heckman	Moody Drilling Co., Inc.	1953	H	1150	S	Dco/sh
654	4138-8020	Phil Armitage	Berkley D. Bossard	1968	H	1092	T	Qo/sdgv
655	4135-8008	T. T. Shafer	Moody Drilling Co., Inc.	1953	H	1110	S	Qo/gr
657	4135-8008	Isabel Abernathy	Max Hickernell	1972	H	1088	T	Qo/sdgv
658	4135-8008	Erie Lackawanna R. R.	Moody Drilling Co., Inc.	1953	H	1060	T	Qo/gr
659	4135-8009	M. M. Bowser	Max Hickernell	1960	H	1127	S	Dco/sh
662	4136-8018	William Lucian	do.	1968	H	1085	T	Qo/gr
665	4136-8014	E. E. Wilson	Berkley D. Bossard	1968	H	1115	S	Dco/sh
666	4135-8009	B. A. Schenk	Moody Drilling Co., Inc.	1951	H	1091	T	Qo/gr
668	4135-8010	G. W. Laver	Max Hickernell	1961	H	1210	S	Mcu/ss
669	4147-8016	H. S. Adams	do.	1969	H	1125	S	Dco/sh
670	4147-8019	Lloyd Nelson	---	1969	H	1236	S	Qt/gr
671	4150-8023	David Guianen	B. W. Bateman & Son	1969	H	1042	S	Dco/sh
672	4148-8017	Earl Rice	Max Hickernell	1969	H	1220	S	Dco/sh
673	4149-8017	J. U. Varee	B. W. Bateman & Son	1969	H	1180	S	Dco/sh
674	4147-8019	Spring Twp.	Max Hickernell	1969	H	1220	S	Dco/sh

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otal lepth elow and irface Feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
110	94	6	75;85	32	6/70	24	.45	---	---	---	Cw- 582
123	58	7	87;118	6	6/70	4	---	---	---	---	583
74	30	5	---	8	10/47	10	.15	---	---	---	584
80	48	6	68	15	8/70	10	---	---	---	---	586
53	23	7	---	15	3/53	20	4.0	---	---	---	587
33	16	7	---	12	10/50	8	---	---	---	---	588
128	22	6	123	45	9/70	10	---	---	---	---	589
33	27	8	23;31	11	11/63	7	---	---	---	---	590
91	91	6	87	2	10/70	5	---	---	---	---	592
95	95	6	90	35	10/70	20	---	---	---	---	594
80	28	5	---	18	5/50	8	---	---	---	---	595
114	114	6	114	60	10/70	20	---	---	---	---	596
147	29	8	---	11	---	5	---	---	---	---	598
106	96	6	90	2	7/69	6	.07	---	---	---	599
100	48	7	---	50	9/50	10	---	---	---	---	600
84	77	6	63;75	50	4/67	8	.40	---	---	---	601
110	31	8	---	50	6/56	20	---	---	---	---	602
176	94	6	20;132	105	6/68	15	1.5	---	---	---	603
125	125	6	120	F	10/69	20	4.0	---	---	---	604
50	36	7	---	30	11/51	20	---	---	---	---	605
54	23	8	---	16	5/51	20	---	8	450	---	606
74	74	8	---	F	4/68	20	3.3	---	---	---	607
70	---	---	34	30	1/47	5	.12	---	---	---	608
100	29	8	---	50	1/57	30	---	---	---	---	609
135	28	8	---	55	7/55	40	---	---	---	---	610
88	20	7	---	30	8/52	1	---	---	---	---	611
65	29	6	---	25	5/70	10	.25	---	---	---	612
70	30	7	---	18	7/72	45	22	---	---	---	613
87	41	6	---	66	4/63	10	---	---	---	---	615
58	19	6	---	2	6/63	15	1.5	---	---	---	616
80	37	6	---	18	8/69	5	.08	---	---	---	617
71	22	6	---	5	---	10	.20	---	---	---	618
77	40	6	38;56;67	6	5/64	20	2.2	---	---	---	619
63	27	6	---	8	6/63	8	---	---	---	---	620
46	46	6	44	7	7/66	20	---	---	---	---	622
72	24	6	---	55	8/64	12	12	---	---	---	623
99	25	7	51;70;92	25	9/66	5	---	---	---	---	624
78	25	7	36;61	12	8/66	5	---	---	---	---	625
75	---	7	68	16	10/66	10	---	---	---	---	626
65	31	6	---	20	6/70	20	.44	---	---	---	628
75	31	7	---	40	6/70	20	.57	---	---	---	629
88	22	6	68	43	5/67	25	3.6	---	---	---	630
173	173	6	168	30	1/67	20	.36	---	---	---	631
102	34	6	---	46	1/67	10	---	---	---	---	632
57	27	6	37;47;54	---	5/67	15	---	---	---	---	634
90	39	6	39;80	50	4/64	20	.50	---	---	---	635
76	25	6	---	50	8/64	15	15	---	---	---	636
95	---	6	90	1	5/69	20	---	---	---	---	637
66	34	7	45;60	21	5/66	20	---	---	---	---	638
74	38	6	55	12	10/68	20	---	---	---	---	640
47	24	6	36;6	10	10/68	6	---	---	---	---	641
78	40	5	---	38	9/48	7	.18	---	---	---	642
72	35	6	20;53	15	9/68	14	.31	---	---	---	643
54	35	8	19;32	8	10/69	60	2.5	---	---	---	644
131	21	7	---	81	7/68	15	---	---	---	---	645
83	24	6	---	22	7/68	H	.02	---	---	---	646
76	27	6	48;65	1	7/67	4	---	---	---	---	647
171	105	6	23;56;123	93	6/68	15	.71	---	---	---	648
98	98	6	64;92	4	5/68	6	.26	---	---	---	649
114	114	6	109	7	---	15	1.2	---	---	---	650
74	25	6	43;57;71	28	4/64	20	.91	---	---	---	651
100	31	7	68;86	22	5/66	5	---	---	---	---	652
60	18	7	---	15	3/53	10	---	---	---	---	653
51	51	6	46	11	5/68	15	1.7	---	---	---	654
39	39	7	---	24	11/53	10	---	---	---	---	655
19	19	14	16	9	6/72	---	---	---	---	---	657
154	154	7	---	6	1953	50	---	---	---	---	658
70	54	7	64	20	11/60	4	.08	6	350	---	659
77	77	6	72	10	2/68	20	.67	---	---	---	662
52	49	6	25;45	17	10/68	6	.20	---	---	---	665
79	79	7	---	12	10/51	20	---	---	---	---	666
90	27	8	55;80	52	2/61	7	.18	---	---	---	668
57	30	8	21;29	10	8/69	10	---	---	---	---	669
45	25	12	25	4	9/69	13	---	---	---	---	670
45	26	6	26	12	8/69	1	.03	---	---	---	671
59	25	7	34	3	12/69	15	---	---	---	---	672
70	22	6	21;35	8	10/69	6	.11	---	700	---	673
38	36	6	34	4	12/69	4	---	3	500	---	674

TABLE 6

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer litholo
Number	Lat-Long							
Cw- 675	4135-8010	Robert 5tein	Max Hickernell	1961	H	1132	S	Qo/sdgv
676	4135-8010	R. V. Walters	do.	1960	H	1190	S	Mcu/ss
677	4150-8020	Peter Stagl	do.	1970	H	1142	S	Qt/gr
679	4150-8017	Frank Yanowich	do.	1969	H	1152	S	Qo/gr
680	4150-8018	James Francis	8. W. 8ateman & Son	1966	H	1154	S	Oco/sh
681	4150-8022	S. L. Potter	do.	1966	H	1058	S	Oco/sh
682	4149-8016	Richard Payne	do.	1966	H	1250	S	Qt/gr
683	4150-8018	John Hepak	8oyd Lee Hall	1966	H	1120	S	Oco/sh
684	4150-8018	Charles Payne	8. W. 8ateman & Son	1969	H	1150	S	Oco/sh
685	4148-8019	George King	Max Hickernell	1968	H	1182	S	Qt/gr
686	4148-8022	F. L. McMillin	8. W. 8ateman & Son	1968	H	945	S	Oco/sh
687	4148-8020	William Ebert	Max Hickernell	1968	H	1194	S	Oco/sh
688	4148-8021	do.	do.	1968	H	1152	S	Oco/sh
689	4145-8016	J. H. Hatch	do.	1967	H	1220	S	Oco/sh
690	4135-8011	W. R. Semerad	do.	1972	H	1130	S	Qo/gr
691	4132-8028	Gerald Green	Harland H. Knapp	1970	H	1179	S	Msh/st
692	4135-8011	Oorothy Furno	Max Hickernell	1966	H	1118	T	Qo/gr
693	4134-8030	John Weaver	Harland H. Knapp	1970	H	1058	S	Mcu/ss
695	4135-8011	J. E. 5emerad	Max Hickernell	1962	H	1160	S	Mcu/ss
696	4133-8029	Paul Kieffer	Harland H. Knapp	1970	H	1070	S	Mcu/ss
697	4135-8011	P. R. 8ean	Max Hickernell	1964	H	1180	S	Oco/sh
698	4134-8029	George Finley	Harland H. Knapp	1969	H	1113	H	Mbe/st
699	4135-8011	R. 8. Flickinger	Max Hickernell	1972	H	1245	S	Mbe/st
701	4135-8012	Gary 8osco	8erkley O. 8ossard	1973	H	1125	S	Oco/st
702	4135-8012	Oonald Senet	do.	1969	H	1192	S	Mcu/ss
703	4135-8013	H. T. Linz	Moody Drilling Co., Inc.	1953	H	1232	S	Msh/st
704	4135-8013	M. K. Kebert	do.	1951	H	1250	S	Msh/st
705	4135-8014	W. L. Schreckengost	Max Hickernell	1964	H	1155	S	Mbe/st
706	4134-8029	William Hess	Charles R. Smith	1970	H	1090	S	Mcu/ss
707	4135-8014	Pa. Game Commission	Moody Drilling Co., Inc.	1953	H	1148	S	Mbe/st
708	4133-8029	John Mash	Charles R. Smith	1970	H	1027	S	Mcu/ss
709	4129-8025	O. L. 8uckley	Harland H. Knapp	1970	H	1298	S	Msl/st
710	4133-8029	Al Reiser	do.	1970	H	1060	S	Mcu/ss
711	4133-8028	Howard Collins	do.	1970	H	1095	S	Mcu/ss
712	4133-8028	Westford Store	do.	1970	H	1105	S	Mcu/ss
713	4135-8014	G. R. 8rown	Moody Drilling Co., Inc.	1949	H	1274	S	Msh/st
715	4135-8014	John 8rown	do.	1949	H	1260	S	Msh/st
716	4132-8028	Robert McLaughlin	Hazel 8. Hollick	1967	H	1081	S	Mbe/st
717	4135-8014	M. W. Hough	Moody Drilling Co., Inc.	1949	---	1236	S	Msh/st
718	4135-8015	F. L. Robinson	8erkley O. 8ossard	1972	H	1115	S	Mcu/st
719	4134-8029	William Steigerwald	Hazel 8. Hollick	1967	H	1088	S	Mcu/ss
720	4135-8015	Jim Martin	8erkley O. 8ossard	1972	H	1120	S	Oco/st
721	4133-8029	S. H. Smith	Ralph E. Robison	1967	H	1050	S	Mcu/ss
723	4135-8015	R. E. Watkins	Lininger Drilling & Pumps	1966	H	1255	H	Msh/st
725	4135-8015	C. E. Martin	Moody Drilling Co., Inc.	1964	H	1140	S	Qo/gr
726	4135-8015	Pengrove Coal Co.	do.	1968	N	1118	S	Qo/sdgv
727	4135-8018	Evert Allen	do.	1952	H	1168	S	Msh/st
729	4133-8029	John Koss	Harland H. Knapp	1968	H	1080	S	Mcu/ss
730	4132-8028	Richard McGinnis	do.	1968	H	1055	S	Mcu/ss
731	4133-8029	Mike Klaich	do.	1968	H	1082	S	Mcu/ss
732	4134-8029	Charles Callam	do.	1969	H	1112	H	Mbe/st
733	4135-8018	W. O. Myers	Moody Drilling Co., Inc.	1957	H	1250	S	Msh/st
734	4134-8030	Chester Starr	Harland H. Knapp	1969	H	1050	S	Mcu/ss
735	4135-8018	Marie Tischler	Moody Drilling Co., Inc.	1950	H	1140	S	Mbe/st
736	4135-8018	H. A. Thornton	do.	1963	H	1100	S	Mcu/ss
737	4133-8029	Foster Webb	Harland H. Knapp	1969	H	1054	S	Mcu/ss
739	4133-8029	Harry Robinson	do.	1969	H	1082	S	Mcu/ss
740	4134-8028	Arthur 5caff	do.	1969	H	1127	S	Mbe/st
741	4133-8029	Joseph Adamcek	8erkley O. 8ossard	1967	H	1040	S	Mcu/ss
742	4133-8029	Edward Campbell	Harland H. Knapp	1969	H	1038	S	Mcu/ss
743	4132-8028	George Grabowski	do.	1968	H	1100	S	Mbe/st
744	4131-8025	5tanley Grelewski	Max Hickernell	1969	H	1288	S	Msl/st
745	4135-8018	C. 8. Freeman	---	1965	H	1110	S	Mcu/ss
746	4133-8029	Emil Pontau	Harland H. Knapp	1968	H	1079	S	Mcu/ss
747	4135-8018	Orville McIntire	Max Hickernell	1972	H	1132	S	Mbe/st
748	4142-8019	Newton Scott	do.	1970	H	1208	S	Oco/st
749	4144-8018	C. F. Peterman	do.	1969	H	1282	S	Mcu/ss
750	4140-8016	L. M. Rifenberrick	do.	1970	H	1308	S	Mbe/st
751	4142-8021	Oavid Richmond	do.	1970	H	1036	S	Qo/gr
752	4142-8019	Theodore 8oratyn	do.	1969	H	1300	S	Mbe/st
753	4144-8017	C. F. Peterman	do.	1969	H	1250	S	Oco/sh
754	4141-8022	Oavid Zolnai	do.	1970	H	1230	S	Mcu/ss
755	4141-8017	William Norris	do.	1970	H	1339	S	Qt/gr
756	4141-8016	Edward Linz	do.	1970	H	1354	S	Msh/st
757	4142-8019	William Koch	do.	1967	H	1150	S	Oco/sh
758	4142-8016	Elbert Hickernell	do.	1967	H	1392	S	Msh/st
759	4143-8018	K. E. 8oyer	do.	1967	H	1320	S	Mcu/ss
760	4146-8024	H. Krause	8erkley O. 8ossard	1969	H	1062	H	Oco/sh
761	4143-8018	R. C. Ricardo	Max Hickernell	1968	H	1312	S	Mcu/ss
762	4142-8018	Oavid Jones	do.	1967	H	1325	S	Mo/sh
763	4144-8020	William Warner	do.	1969	H	1020	S	Oco/sh

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otal epth elow and -face eet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
68	68	7	63	21	3/61	4	---	---	---	---	Cw- 675
50	30	7	33;41	16	11/60	10	.29	---	---	---	676
20	20	6	16	F	8/70	20	---	17	900	---	677
96	96	8	93	20	6/69	10	---	---	---	---	679
51	39	6	26;40	10	8/66	3	.08	---	---	---	680
52	19	6	26	10	7/66	3	.08	---	---	---	681
40	38	6	38	10	11/66	10	---	10	500	---	682
80	35	8	60;75	20	11/66	5	.27	---	---	---	683
75	37	6	16;50	10	8/69	1	.02	---	---	---	684
30	30	6	26	6	11/68	15	---	---	---	---	685
50	24	6	21	12	8/68	10	1.1	11	400	---	686
50	16	8	31	7	4/68	6	---	---	---	---	687
95	---	8	42	15	4/68	2	---	2	850	---	688
106	20	6	26;82	18	8/67	6	---	6	300	---	689
82	82	6	75	10	4/72	5	---	---	---	---	690
62	---	7	38;58	24	5/70	30	2.7	---	---	---	691
21	21	7	18	4	5/66	10	---	---	---	---	692
66	23	6	---	31	5/70	20	---	---	---	---	693
36	22	7	24;33	4	6/62	40	---	10	500	---	695
62	22	7	42	8	4/70	10	.33	---	---	---	696
70	59	6	59	28	7/64	9	---	---	---	---	697
86	31	6	50;72	22	8/69	6	.10	---	---	---	698
41	18	6	37	18	7/72	10	---	---	---	---	699
106	42	6	73;96	5	5/73	6	.07	---	---	---	701
52	23	6	36	9	11/69	35	35	---	---	---	702
80	33	7	---	25	7/53	8	---	---	---	---	703
68	30	7	---	16	4/51	5	---	---	---	---	704
64	24	6	47;56;67	23	3/64	5	---	---	---	---	705
100	13	6	92	57	8/70	---	---	---	---	---	706
58	21	8	---	24	10/53	30	---	---	---	---	707
56	36	6	44	15	9/70	14	1.8	---	---	---	708
50	23	7	38;45	15	6/70	20	4.0	---	---	---	709
62	22	7	35;47	30	10/70	25	2.5	---	---	---	710
90	30	7	25;28	10	10/70	25	2.5	---	---	---	711
103	28	7	28;40;95	12	10/70	25	3.1	---	---	---	712
127	25	8	---	24	10/49	3	---	---	---	---	713
150	34	5	---	20	6/49	C	---	---	---	---	715
40	24	6	36	6	5/67	16	8.0	---	---	---	716
42	21	7	---	6	10/49	20	---	---	---	---	717
80	44	6	30;65	22	2/72	40	5.0	---	---	---	718
81	27	6	76	55	9/67	12	4.0	---	---	---	719
105	96	6	28;90	10	11/72	20	.27	---	---	---	720
60	30	7	50	20	4/67	20	---	---	---	---	721
158	35	7	---	65	9/66	30	.81	---	---	---	723
76	76	6	---	F	9/64	50	---	---	---	---	725
71	38	10	---	F	8/68	1027	---	---	---	---	726
70	25	7	---	18	7/52	20	---	---	---	---	727
80	17	6	12;74	15	9/68	10	.18	---	---	---	729
75	33	6	45;68	22	11/68	20	1.1	---	---	---	730
78	28	6	70	35	11/68	6	.17	---	---	---	731
62	27	6	50	10	5/69	6	.13	---	---	---	732
86	20	6	---	53	12/57	15	---	---	---	---	733
60	30	6	40;50	28	6/69	25	---	---	---	---	734
60	21	6	---	8	8/50	10	---	---	---	---	735
71	28	6	24	12	10/63	15	.25	---	---	---	736
60	27	6	30;52	10	7/69	30	30	---	---	---	737
75	22	6	45;70	10	8/69	10	.18	---	---	---	739
58	25	6	25;50	6	8/69	30	30	---	---	---	740
54	32	6	27	7	10/67	50	6.2	---	---	---	741
67	30	6	45;60	12	6/69	25	---	---	---	---	742
71	26	6	35;68	10	5/68	10	.18	---	---	---	743
60	25	6	21	5	4/69	30	---	---	---	---	744
75	18	6	41;74	17	9/65	5	---	---	---	---	745
58	21	6	30;52	19	9/68	40	40	---	---	---	746
96	33	6	49;76	28	8/72	10	---	---	---	---	747
124	37	6	54;70	32	5/70	4	---	---	---	---	748
65	37	7	49	25	9/69	20	.83	---	---	---	749
112	61	6	94	41	1/70	20	---	---	---	---	750
100	100	6	95	10	11/70	25	---	3	450	---	751
98	27	7	36;94	80	8/69	6	---	---	---	---	752
55	34	6	36	10	9/69	8	---	---	---	---	753
98	19	6	63;92	70	1/70	8	---	---	---	---	754
35	35	6	35	8	6/70	12	---	---	---	---	755
80	76	6	77	8	5/70	5	---	---	---	---	756
80	26	6	47	21	9/67	5	---	---	---	---	757
40	22	---	26;31	---	6/67	90	90	---	---	---	758
89	46	6	49;68;75	5	7/67	10	---	---	---	---	759
53	30	6	17;20	4	7/69	2	.03	---	---	---	760
88	40	6	48;70	16	4/68	20	---	---	---	---	761
61	40	6	43;56	8	1967	6	---	---	---	---	762
200	164	8	165	15	5/69	4	---	---	---	---	763

TABLE 6,

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw- 764	4145-8018	C. A. Pero	Max Hickernell	1968	H	1320	H	Mcu/ss
765	4145-8018	K. E. Bailey	do.	1968	H	1310	H	Mcu/ss
766	4142-8018	Helen Byerly	do.	1968	H	1335	S	Mo/sh
767	4142-8020	John Waylo	do.	1968	H	1122	S	Dco/sh
768	4141-8019	George Fenton	do.	1968	H	1200	S	Mcu/ss
769	4146-8023	Roland Smith	Berkley O. Bossard	1968	H	990	H	Qt/gr
770	4142-8018	Lee Smith	Max Hickernell	1968	H	1342	H	Msh/st
771	4142-8019	James Hoover	Berkley O. Bossard	1968	H	1272	H	Mbe/st
772	4145-8020	H. T. Peterman	Max Hickernell	1968	H	1055	S	Dco/sh
773	4139-8022	P. L. Brown	do.	1969	H	1250	H	Mbe/st
774	4141-8018	James Ellenberger	do.	1969	H	1220	S	Mcu/st
775	4141-8017	Rolland Norris	do.	1970	H	1258	S	Mcu/st
776	4141-8020	M. C. Mills	do.	1970	H	1112	H	Dco/st
777	4135-8018	Fred Moss	Moody Drilling Co., Inc.	1957	H	1132	S	Mcu/ss
778	4135-8018	I. A. Burchfield	do.	1948	H	1112	S	Mbe/st
779	4141-8019	William Agnew	Max Hickernell	1970	H	1192	S	Mcu/ss
780	4138-8022	Albert Rogers	do.	1966	H	1212	S	Mcu/ss
781	4135-8018	Orville McEntire	do.	1962	H	1120	S	Mbe/st
782	4138-8021	Richard James	do.	1967	H	1122	S	Qo/gr
783	4144-8021	Ohio Rubber Co.	Moody Drilling Co., Inc.	1969	N	952	T	Qo/sdgv
785	4140-8017	Robert Saunier	Max Hickernell	1967	H	1272	S	Mbe/st
786	4138-8022	Frieda Weniger	do.	1967	H	1182	S	Mbe/st
787	4139-8020	John Hindman	Berkley O. Bossard	1967	H	1116	S	Qo/gr
788	4138-8016	Frederick Sandy	Max Hickernell	1967	H	1310	S	Msh/st
789	4135-8019	John Wiltrout	Moody Drilling Co., Inc.	1965	H	1270	S	Mcu/ss
790	4138-8017	R. C. Orda	Berkley O. Bossard	1967	H	1182	S	Mcu/ss
791	4141-8019	O. R. Sperry	Max Hickernell	1967	H	1210	S	Mcu/st
792	4139-8016	A. G. Pearson	do.	1967	H	1270	S	Mbe/st
793	4139-8021	Pete Ferraino	do.	1967	H	1160	S	Mcu/ss
795	4141-8020	B. L. Smith	do.	1968	H	1032	T	Qo/gr
797	4138-8018	C. Y. Hays	do.	1968	H	1082	S	Qo/gr
798	4141-8019	Bernice Robinson	do.	1968	H	1314	S	Mbe/st
799	4140-8018	E. O. Foster	do.	1968	H	1200	S	Dco/sh
800	4138-8018	Paul Kurt	do.	1968	H	1082	T	Qo/gr
801	4138-8023	Gordon Wilson	Berkley O. Bossard	1969	H	1058	S	Qt/gr
802	4139-8023	H. G. Brooks	Max Hickernell	1966	H	1240	S	Qo/sdgv
803	4140-8021	Steven Walsh	do.	1966	H	1212	S	Mcu/ss
804	4141-8018	Stanley Nolf	do.	1967	H	1225	S	Qt/gr
805	4135-8019	Albert Knierman	Moody Drilling Co., Inc.	1949	H	1242	S	Msh/st
806	4135-8019	Frank Andrews	do.	1951	H	1185	S	Mo/st
807	4135-8019	J. R. Free	do.	1953	H	1232	S	Mo/sh
808	4135-8020	Jack Ruppell	do.	1952	H	1249	S	Mo/sh
809	4135-8021	Coy Bell	do.	1953	H	1222	S	Mo/sh
810	4135-8021	C. V. Price	do.	1949	H	1232	S	Msh/st
811	4135-8024	Carl Livingston	do.	1951	H	1091	S	Mcu/st
812	4135-8024	Pa. Game Commission	do.	1957	H	1090	S	Mcu/ss
813	4136-8029	Donald Murray	Hazel B. Hollick	1967	H	1031	S	Dco/ss
814	4135-8026	E. B. Meade	Moody Drilling Co., Inc.	1950	H	1081	S	Mcu/ss
815	4133-8007	J. B. Atwell	Max Hickernell	1970	H	1418	S	Msl/ss
816	4135-8010	W. H. Reitze	do.	1970	H	1107	T	Qo/gr
817	4134-8011	Harold Borland	do.	1970	H	1172	S	Mcu/ss
818	4135-8027	Clarence Dunbar	do.	1963	H	1148	S	Mcu/ss
820	4135-8010	Norman Ament	do.	1970	H	1140	S	Dco/sh
821	4135-8027	Edward Calta	Moody Drilling Co., Inc.	1964	H	1138	S	Mcu/ss
822	4135-8009	R. J. Zapf	Max Hickernell	1969	H	1272	S	Mcu/ss
823	4134-8009	Mercer Pike Ch.	do.	1968	H	1440	S	Msl/ss
824	4136-8010	T. S. Bly	Berkley O. Bossard	1968	H	1320	S	Msh/st
825	4135-8009	C. L. Ernst	Max Hickernell	1967	H	1298	S	Mcu/ss
826	4134-8011	Harold Pepper	do.	1967	P	1152	H	Qo/gr
827	4135-8029	Roy Casbourne	Lininger Drilling & Pumps	---	H	1092	S	Mcu/ss
829	4134-8008	Charles Ernst	Max Hickernell	1966	H	1414	S	Msl/st
830	4135-8011	Robert Risher	do.	1966	P	1130	T	Qo/gr
831	4135-8029	Eugene Shaffer	Lininger Drilling & Pumps	1966	H	1082	S	Mcu/---
832	4135-8013	Clinton Pattan	Max Hickernell	1966	H	1085	T	Qo/gr
833	4134-8009	Brian Hotchkiss	do.	1967	H	1395	S	Mm/sh
834	4135-8010	J. H. Cooper	do.	1967	H	1222	S	Mcu/ss
835	4133-8011	Calvin Ernst	do.	1969	H	1100	S	Qo/gr
836	4133-8011	do.	do.	1969	H	1135	S	Mcu/ss
837	4135-8029	William Mooney	Moody Drilling Co., Inc.	1955	H	1098	H	Mcu/ss
838	4135-8029	K. W. Rice	do.	1955	H	1097	H	Mcu/ss
839	4135-8029	R. L. Sanchez	Lininger Drilling & Pumps	1972	H	1088	S	Mcu/ss
840	4135-8029	J. T. Carson	do.	1967	H	1025	S	Qo/sdgv
841	4135-8030	Frank Kiefer	do.	1967	H	1022	S	Mcu/ss
842	4135-8030	Robert Skelding	do.	1968	H	1055	S	Mcu/ss
845	4146-8008	M. L. Merritt	Max Hickernell	1968	H	1455	S	Qt/gr
846	4136-8007	Marion Wright	do.	1973	H	1317	S	Mcu/ss
847	4136-8007	E. L. McCoy	do.	1963	H	1330	S	Msh/st
848	4136-8007	S. F. Bigger	Moody Drilling Co., Inc.	1964	H	1360	S	Mbe/ss
849	4143-8007	J. P. Timsonet	Boyd Lee Hall	1967	H	1358	S	Dco/sh

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otal epth elow and rface eet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
80	36	6	68	22	10/68	20	---	10	400	---	Cw- 764
80	24	6	12	21	10/68	20	---	---	---	---	765
65	54	6	47	0	9/68	10	---	---	---	---	766
85	20	6	47;73	25	10/68	10	---	10	550	---	767
70	21	6	41;56	26	10/68	20	---	---	---	---	768
82	82	6	29	82	8/68	6	---	---	---	---	769
65	27	6	34;53	5	9/68	20	---	---	---	---	770
88	35	6	66;78	35	7/68	5	.11	---	---	---	771
76	36	6	43;62	6	6/68	6	---	---	---	---	772
80	19	6	73	60	9/69	10	---	---	---	---	773
50	33	6	35;46	15	8/69	6	---	---	---	---	774
86	46	6	54;78	15	3/70	20	---	---	---	---	775
208	197	6	187	90	5/70	15	.21	---	---	---	776
119	19	6	---	13	1957	10	---	---	---	---	777
40	21	4	---	---	---	5	---	---	---	---	778
64	21	6	37	17	6/70	20	---	---	---	---	779
105	53	6	56;97	30	9/66	20	.80	---	---	---	780
57	29	7	32;48	12	11/62	50	6.2	---	---	---	781
72	72	6	68	27	4/67	7	---	---	---	---	782
73	63	12	60	5	2/69	650	36	---	---	---	783
87	34	6	71;84	30	7/67	15	---	---	---	---	785
50	34	7	39	11	6/67	20	---	---	---	---	786
25	25	6	14;19	12	6/67	4	---	---	---	---	787
108	25	6	53;67;102	30	6/67	9	---	---	---	---	788
302	99	6	10;50;80;255	208	5/65	20	.21	---	---	---	789
82	42	6	60	35	5/67	7	.20	---	---	---	790
79	20	6	32;64	25	11/67	10	---	---	---	---	791
80	52	7	72	18	9/67	20	---	---	---	---	792
80	43	7	50	25	9/67	50	---	---	---	---	793
78	78	6	71	10	3/68	20	.80	---	---	---	795
90	90	6	30	10	7/68	20	---	---	---	---	797
108	17	7	61;90	12	---	5	---	---	---	---	798
150	39	6	52;69	10	10/68	2	---	---	---	---	799
109	109	6	104	0	12/68	20	.80	---	---	---	800
57	57	6	53	48	3/69	5	---	---	---	---	801
94	94	7	90	60	10/66	10	---	---	---	---	802
110	34	6	---	51	11/66	9	---	---	---	---	803
20	20	6	20	3	3/67	5	---	---	---	---	804
85	14	5	---	25	4/49	3	.05	---	---	---	805
70	20	7	---	10	5/51	10	---	---	---	---	806
110	16	12	---	20	12/53	2	---	---	---	---	807
160	14	8	---	14	11/52	1	---	---	---	---	808
104	10	8	---	15	12/53	4	---	---	---	---	809
59	18	7	---	35	10/49	8	---	---	---	---	810
68	39	7	---	17	5/51	15	---	---	---	---	811
104	35	8	---	49	9/57	20	---	8	340	---	812
62	23	6	38;54	6	10/67	10	.21	---	---	---	813
71	27	7	---	31	1/50	15	1.7	---	---	---	814
83	40	6	58;79	---	3/70	20	.38	---	---	---	815
58	58	8	24	3	3/70	50	2.5	---	---	---	816
94	25	8	74	53	5/70	20	---	---	---	---	817
79	35	6	45;60	38	7/63	20	.91	---	---	---	818
50	31	6	35;46	15	9/70	20	---	---	---	---	820
121	16	6	90	79	9/64	3	.27	---	---	---	821
125	30	6	20;100	102	7/69	9	---	---	---	---	822
26	25	6	21	10	5/68	15	---	---	---	---	823
75	43	6	45	32	4/68	10	.30	---	---	---	824
155	33	---	100;138	98	10/67	10	---	---	---	---	825
66	66	8	62	11	6/67	15	---	---	---	---	826
80	29	7	---	42	---	60	3.3	---	---	---	827
57	38	7	44	15	9/66	20	---	---	---	---	829
55	55	8	51	12	9/66	17	---	---	---	---	830
80	11	7	---	50	9/66	20	1.0	---	---	---	831
69	69	7	65	5	9/66	20	---	---	---	---	832
66	34	6	38;48;59	13	2/67	6	---	---	---	---	833
91	25	6	59;71	65	4/67	11	---	---	---	---	834
44	44	6	44	30	4/69	7	---	---	---	---	835
60	31	6	40;57	28	4/69	30	---	---	---	---	836
77	28	8	---	43	7/55	10	---	---	---	---	837
65	17	8	---	45	7/55	12	---	---	---	---	838
80	23	7	---	40	5/72	30	1.2	---	---	---	839
62	35	7	---	17	11/67	60	2.6	---	---	---	840
60	31	7	---	16	7/67	18	.45	---	---	---	841
74	36	7	---	30	8/68	40	4.0	---	---	---	842
130	130	6	130	70	11/68	8	---	---	---	---	845
130	57	6	109	75	1/73	6	---	---	---	---	846
74	49	6	51;68	5	3/63	6	---	---	---	---	847
152	28	6	130	45	---	10	---	---	---	---	848
85	45	6	50;70;80	12	1/67	11	.21	8	380	---	849

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw- 850	4136-8007	J. J. Aberg	Max Hickernell	1963	H	1372	S	Msh/st
854	4137-8013	Harry Camp	Raymond L. Butterfield	1969	H	1358	H	Msh/st
855	4137-8015	G. C. Bailey	Max Hickernell	1969	H	1163	H	Qo/gr
858	4131-8011	Norris Vogan	do.	1968	H	1338	S	Msl/ss
859	4136-8007	T. M. DeVore	Moody Drilling Co., Inc.	1959	H	1350	S	Msh/st
862	4136-8012	D. L. Clark	Berkley D. Bossard	1969	H	1330	S	Msh/ss
863	4136-8008	Lester Brocious	Moody Drilling Co., Inc.	1953	H	1125	S	Dco/st
865	4136-8013	Robert Kinter	Max Hickernell	1970	H	1220	S	Mcu/ss
866	4136-8008	Kebert Construction Co.	Moody Drilling Co., Inc.	1953	N	1080	S	Dco/sh
868	4136-8008	Gary Gigone	Berkley O. Bossard	1972	H	1370	S	Msh/st
869	4136-8014	Paul Williams	Max Hickernell	1970	H	1110	S	Qo/gr
870	4136-8008	N. B. Wallace	Moody Drilling Co., Inc.	1957	H	1120	S	Dco/sh
871	4139-8012	Richard Miller	Max Hickernell	1970	H	1188	S	Dco/sh
873	4139-8015	John Deeter	do.	1970	H	1270	S	Qo/gr
876	4139-8015	Joseph Vrobel	do.	1970	H	1282	S	Mcu/ss
877	4136-8010	Robert Ackerman	Raymond L. Butterfield	1970	H	1365	S	Msh/st
878	4138-8012	C. M. Winans	Max Hickernell	1970	H	1240	S	Qo/gr
880	4137-8013	Don Davids	do.	1970	H	1350	H	Msh/st
882	4136-8012	O. M. Runner	Berkley D. Bossard	1970	H	1320	S	Msh/st
888	4136-8016	Albert Pickens	Max Hickernell	1970	H	1200	S	Qo/gr
889	4137-8011	Gordon Burns	Berkley D. Bossard	1970	H	1169	S	Dco/sh
891	4136-8008	Harry Burritt	Moody Drilling Co., Inc.	1962	H	1190	S	Dco/sh
893	4136-8008	Paul Pete	Max Hickernell	1964	H	1150	S	Dco/st
894	4136-8008	R. O. Tinker	Moody Drilling Co., Inc.	1953	H	1110	S	Dco/sh
895	4137-8012	Farrah Chevrolet Inc.	do.	1968	C	1400	S	Mcu/ss
898	4136-8010	R. P. Cervone	Berkley D. Bossard	1967	H	1295	S	Msh/sh
902	4136-8008	Horstman Builders	Max Hickernell	1970	P	1260	S	Mcu/ss.
906	4136-8010	Hugh Shilling	do.	1967	H	1330	S	Msh/st
911	4136-8010	G. E. DeMaison	do.	1965	H	1285	S	Qo/sdgv
918	4136-8013	L. O. Pifer	do.	1967	H	1333	S	Msh/st
919	4136-8015	E. L. Moore	do.	1967	H	1191	S	Qo/gr
920	4136-8010	C. W. Steele	Moody Drilling Co., Inc.	1965	H	1320	S	Mcu/ss
921	4136-8013	David Hornstein	Max Hickernell	1966	H	1332	S	Msh/st
922	4136-8010	A. J. Langdon	Moody Drilling Co., Inc.	1965	H	1325	S	Mcu/ss
923	4138-8012	Eva Onspaugh	Max Hickernell	1966	H	1248	S	Mcu/ss
924	4139-8014	O. S. Furno	do.	1966	H	1341	S	Mbe/st
925	4136-8010	Charles Cooper	Moody Drilling Co., Inc.	1957	H	1432	H	Msh/st
927	4138-8014	Pete Hart	Max Hickernell	1966	H	1318	S	Msh/st
928	4135-8015	W. B. Weber	do.	1966	H	1302	H	Msh/st
929	4137-8010	H. S. Williams	do.	1966	P	1190	S	Dco/st
933	4136-8010	J. E. Hill	Moody Drilling Co., Inc.	1965	H	1175	S	Dco/st
934	4136-8010	Crawford Packaging Inc.	Max Hickernell	1972	C	1105	T	Qo/gr
941	4136-8014	Hansens Driving Range	Berkley O. Bossard	1968	H	1140	S	Dco/sh
944	4139-8013	D. R. Houck	Max Hickernell	1968	H	1148	S	Qo/gr
945	4136-8011	Russel Price	Moody Drilling Co., Inc.	1955	H	1310	S	Msh/st
946	4140-8020	Carl Funtal	Berkley O. Bossard	1968	H	1090	S	Dco/ss
950	4139-8014	H. M. Koehler	Max Hickernell	1968	H	1358	S	Msh/st
957	4136-8011	Duane Braham	Moody Drilling Co., Inc.	1965	H	1395	S	Mbe/ss
959	4136-8011	T. L. Getz	Raymond L. Butterfield	1969	H	1392	S	Msh/st
962	4136-8011	R. A. Servidio	Moody Drilling Co., Inc.	1965	H	1368	S	Msh/ss
963	4137-8010	Vic Kress	Max Hickernell	1966	H	1195	S	Dco/sh
965	4136-8011	Vernon Twp.	Moody Drilling Co., Inc.	1965	U	1370	S	Mcu/ss
966	4136-8013	Richard Kurinko	Max Hickernell	1966	H	1334	S	Msh/st
967	4136-8011	Vernon Twp.	Moody Drilling Co., Inc.	1965	U	1385	S	Mcu/ss
968	4136-8012	James Vodenichar	Max Hickernell	1961	H	1235	S	Mcu/ss
969	4137-8015	Paul Palka, Jr.	do.	1967	H	1162	S	Dco/st
970	4136-8012	F. E. Higley	Moody Drilling Co., Inc.	1952	H	1235	S	Dco/sh
972	4138-8012	L. L. Worden	Max Hickernell	1967	H	1233	S	Mcu/ss
975	4136-8013	Melvin Metzler	Moody Drilling Co., Inc.	1946	H	1100	S	Qo/gr
976	4136-8013	Max Dillaman	Max Hickernell	1964	H	1250	S	Mcu/ss
978	4136-8013	K. A. Bradley	R. E. Mohr Well Drilling	1969	H	1310	S	Msh/st
979	4136-8015	Charles Holabaugh	Max Hickernell	1969	H	1125	W	Qo/gr
980	4136-8013	George Ott	Moody Drilling Co., Inc.	1964	H	1312	S	Msh/st
981	4137-8013	H. L. Williams	Max Hickernell	1969	H	1345	S	Mbe/st
982	4136-8014	William Hough	do.	1969	H	1260	S	Mbe/st
985	4136-8013	Raymond Johnson	Moody Drilling Co., Inc.	1964	H	1300	S	Mbe/st
986	4136-8013	W. A. Massey	Max Hickernell	1965	H	1345	S	Msh/st
987	4137-8012	Goodea Construction Co.	Berkley O. Bossard	1969	H	1400	H	Msh/st
989	4138-8013	Robert Kinter	Max Hickernell	1969	H	1390	H	Msh/st
990	4136-8011	Bernard Schaffner	do.	1969	H	1375	S	Msh/st
991	4136-8014	Tom Hough	Moody Drilling Co., Inc.	1952	H	1242	S	Mo/sh
992	4136-8014	Raymond Holabaugh	Max Hickernell	1964	H	1272	H	Qo/sdgv
993	4137-8009	R. F. Droz	do.	1968	H	1100	S	Qo/gr
994	4136-8014	T. J. Prenatt	do.	1972	H	1210	S	Mbe/st
995	4136-8014	M. P. Stein	Moody Drilling Co., Inc.	1954	H	1115	S	Dco/st
996	4136-8014	E. H. Avoy	do.	1949	H	1115	S	Dco/st
998	4136-8010	J. J. Barco	Max Hickernell	1968	H	1160	S	Dco/sh
999	4136-8014	F. H. Miller	Moody Drilling Co., Inc.	---	H	1118	S	Dco/sh
1000	4136-8015	C. L. Ferry	do.	1949	H	1228	S	Mbe/st
1003	4137-8012	Chadderton Air Service	Raymond L. Butterfield	1968	H	1405	H	Msh/st

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Total depth below land urface feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hardness (gpg)	Specific conductance (micromhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
115	24	8	90;102;112	70	9/63	10	.22	---	---	---	Cw- 850
64	16	6	17;60	6	8/69	15	.71	---	---	---	854
68	68	6	64	F	11/69	20	---	---	---	---	855
40	30	6	35	10	6/68	20	---	---	---	---	858
90	27	6	---	50	3/59	15	---	---	---	---	859
107	100	6	73	17	3/69	20	.46	---	---	---	862
40	29	8	---	15	5/53	20	---	---	---	---	863
76	34	6	54	12	1/70	20	---	---	---	---	865
113	113	8	---	3	9/53	6	---	---	---	---	866
122	52	6	20;89	71	1972	---	---	---	---	---	868
70	70	6	66	9	3/70	10	---	---	---	---	869
82	39	8	---	15	5/57	13	---	---	---	---	870
91	22	6	42;78	30	4/70	9	---	---	---	---	871
40	140	6	135	30	4/70	20	---	---	---	---	873
25	100	7	108	35	5/70	6	---	---	---	---	876
88	38	6	36;82	46	6/70	18	1.8	---	---	---	877
05	105	6	100	34	5/70	15	.48	---	---	---	878
64	42	8	18;64	80	6/70	30	.75	---	---	---	880
06	103	6	89	13	7/70	20	.62	---	---	---	882
09	109	6	103	15	---	15	---	---	---	---	888
44	42	6	37	18	10/70	24	4.0	---	---	---	889
10	86	6	---	20	9/62	15	---	---	---	---	891
50	20	6	28;41;46	9	6/64	7	.17	---	---	---	893
49	35	7	---	16	7/53	0.5	---	---	---	---	894
94	102	6	24;63;146	---	---	---	---	---	---	---	895
72	40	6	22;39	17	8/67	9	.21	---	---	---	898
04	55	10	87;94;182	55	11/70	---	---	---	---	---	902
93	32	6	40;75	25	11/67	12	---	---	---	---	906
08	108	7	108	---	---	10	---	---	---	---	911
84	32	6	45;60	12	9/67	20	---	---	---	---	918
10	110	6	110	40	9/67	20	---	---	---	---	919
36	32	6	60;117	66	6/65	8	.32	---	---	---	920
73	21	6	43;57;68	16	6/66	20	.69	---	---	---	921
87	64	6	29;65	40	5/65	6	.26	---	---	---	922
57	20	6	35;53	25	7/66	10	---	---	---	---	923
20	62	6	85;102;119	20	7/66	10	---	---	---	---	924
95	44	8	---	35	7/57	20	---	---	---	---	925
82	47	6	61;78	18	9/66	12	---	---	---	---	927
80	18	8	34;62	12	8/66	5	---	---	---	---	928
70	19	6	54	18	8/66	2	---	---	---	---	929
71	32	6	70	37	8/65	1	.004	---	---	---	933
53	53	6	50	18	4/72	20	---	---	---	---	934
58	58	6	49	14	4/68	20	.64	---	---	---	941
43	43	6	39	0	5/68	60	2.6	---	---	---	944
68	16	6	---	30	9/55	15	---	---	---	---	945
71	26	6	18;50	12	5/68	30	3.8	---	---	---	946
20	62	6	62;93;116	30	8/68	15	---	---	---	---	950
82	94	6	44;73;104	53	5/65	30	.23	---	---	---	957
83	---	6	40;70	30	7/69	12	.48	---	---	---	959
21	95	6	93	38	6/65	8	.33	---	---	---	962
133	24	7	61;126	47	10/66	3	---	---	---	---	963
382	51	6	100	33	1965	70	---	---	---	---	965
51	18	6	28;35;48	18	10/66	7	---	---	---	---	966
337	59	6	70	39	1/65	100	---	---	---	---	967
80	32	8	45;75	20	11/61	20	---	---	---	---	968
109	59	6	71;102	20	1967	4	---	---	---	---	969
105	89	7	95	20	10/52	10	---	---	---	---	970
61	39	6	47;57	10	1/67	20	1.0	---	---	---	972
46	46	4	---	---	---	10	---	---	---	---	975
84	24	6	51;63;81	30	5/64	10	---	---	---	---	976
78	52	7	---	6	2/69	12	.27	---	---	---	978
56	56	6	50	F	7/69	18	---	---	---	---	979
79	34	6	12;15;79	12	4/64	30	---	---	---	---	980
128	78	8	---	50	6/69	18	---	---	---	---	981
128	127	6	126	80	6/69	12	---	---	---	---	982
100	28	6	85	30	5/64	8	.11	---	---	---	985
82	67	7	69	12	7/65	20	---	---	---	---	986
100	34	6	40	17	5/69	30	2.3	---	---	---	987
82	25	6	38;61	31	4/69	20	1.2	---	---	---	989
94	69	6	91	86	4/69	10	---	---	---	---	990
87	70	7	---	30	12/52	10	---	---	---	---	991
56	56	6	52	40	3/64	3	.19	16	550	7.7	992
46	46	6	40	9	6/68	8	---	---	---	---	993
72	32	6	48;61	28	7/72	10	---	---	---	---	994
61	28	7	---	12	11/54	6	---	---	---	---	995
82	27	4	---	12	3/49	8	.29	---	---	---	996
70	20	9	60;118;140	30	8/68	5	---	---	---	---	998
89	37	6	---	18	---	10	---	---	---	---	999
130	100	7	---	78	6/49	8	---	---	---	---	1000
80	40	6	45;76	20	10/68	65	13	---	---	---	1003

TABLE 6,

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-1005	4136-8015	Robert Custard	Moody Drilling Co., Inc.	1949	H	1230	S	Qo/sdgv
1008	4138-8011	H. L. Ashcraft	Max Hickernell	1968	H	1165	S	Dco/sh
1011	4136-8015	H. E. Miller	do.	1964	H	1202	S	Mbe/ss
1012	4136-8015	C. B. Kazebee	Moody Drilling Co., Inc.	1958	H	1162	S	Qo/gr
1013	4138-8012	F. T. Schwab	Max Hickernell	1969	H	1310	S	Mcu/ss
1014	4136-8015	Hi-Way Enterprises	Moody Drilling Co., Inc.	1958	C	1140	S	Qo/gr
1015	4136-8015	H. E. Saul	Max Hickernell	1964	H	1182	S	Qo/gr
1017	4136-8016	H. Smallenberger	Moody Drilling Co., Inc.	1953	H	1146	S	Mcu/ss
1018	4136-8016	Michael Strumlok	do.	1956	H	1160	S	Mcu/ss
1019	4136-8016	J. A. Weyman	do.	1961	H	1178	S	Dco/sh
1021	4136-8016	Andrew Rawson	Lininger Drilling & Pumps	1968	H	1190	S	Mcu/ss
1022	4136-8016	W. B. Corey	Moody Drilling Co., Inc.	1953	H	1162	S	Mcu/st
1024	4136-8016	Richard Brant	Max Hickernell	1963	H	1211	H	Dco/st
1025	4131-8026	N. J. Duffy	Berkley D. Bossard	1969	H	1282	S	Msh/ss
1026	4130-8026	Anna Morrell	do.	1969	H	1280	H	Msh/st
1027	4131-8022	Ben Adkins	do.	1970	H	1058	S	Mbe/ss
1028	4132-8022	O. R. Brooks	do.	1969	H	1060	S	Mbe/ss
1029	4136-8016	William Ferguson	Moody Drilling Co., Inc.	1964	H	1180	S	Dco/sh
1030	4136-8017	Shlumberg Logging Co.	do.	1965	H	1121	H	Qo/gv
1031	4136-8017	Lawrence Roberts	do.	1963	H	1112	S	Qo/sdgv
1033	4136-8017	W. H. Jones	do.	1963	H	1078	T	Qo/sdgv
1034	4140-8007	A. C. Smith	Max Hickernell	1969	H	1395	S	Mcu/ss
1035	4136-8017	C. E. Jessup	do.	1966	H	1098	S	Qo/gr
1045	4136-8017	A. H. Blank	Moody Drilling Co., Inc.	1964	H	1080	T	Qo/gr
1046	4136-8017	D. C.'Klinginsmith	Max Hickernell	1965	P	1118	S	Qo/gr
1047	4136-8017	Stanley Kopczyk	do.	1965	H	1120	S	Qo/gr
1048	4136-8017	W. C. Jones	Moody Drilling Co., Inc.	1962	H	1110	S	Qo/gr
1049	4136-8017	Stewart's Bowling Lanes	do.	1957	H	1133	S	Dco/st
1050	4136-8017	Donald Eaton	Max Hickernell	1973	C	1140	S	Dco/st
1051	4136-8018	William Price	do.	1963	H	1135	S	Mbe/st
1053	4135-8009	Joseph Onder	do.	1969	H	1195	S	Dco/sh
1055	4136-8018	T. A. Thomas	Moody Drilling Co., Inc.	1964	H	1078	T	Qo/sdgv
1057	4136-8018	A. C. Adams	do.	1959	H	1075	T	Qo/gr
1058	4136-8018	Robert Moss	Max Hickernell	1972	H	1095	S	Qo/gr
1059	4136-8019	J. F. Shellito	Berkley D. Bossard	1972	P	1152	H	Mcu/ss
1060	4136-8019	Don Johnson	Moody Drilling Co., Inc.	1964	H	1152	H	Mcu/ss
1061	4136-8019	A. E. Smith	do.	1957	H	1160	H	Mbe/st
1062	4136-8019	Conneaut Lake High Sch.	do.	1952	C	1158	S	Mcu/ss
1063	4136-8019	T. N. Moyers	Max Hickernell	1960	H	1154	H	Mbe/ss
1064	4136-8019	B. G. Rawson	Moody Drilling Co., Inc.	1951	H	1140	S	Mcu/ss
1065	4140-8008	J. J. Badagiacca	Max Hickernell	1967	H	1380	S	Mcu/ss
1066	4136-8019	B. G. Rawson	Moody Drilling Co., Inc.	1957	H	1118	S	Mcu/ss
1067	4136-8019	Kiwanis Club	do.	1949	H	1112	H	Mcu/ss
1068	4136-8019	C. B. Smith	do.	1950	H	1127	H	Mcu/ss
1069	4136-8020	Camp Lend-A-Hand	do.	---	---	1220	S	Mcu/ss
1070	4140-8008	Mead Nursing Home	Max Hickernell	1967	I	1400	S	Mcu/ss
1071	4140-8008	Ch. of Latter Day Saints	do.	1967	H	1412	S	Msh/st
1072	4136-8020	E. H. Henry	Moody Drilling Co., Inc.	1964	H	1230	S	Mcu/ss
1074	4136-8020	Frank Sobieski	Max Hickernell	1962	H	1170	S	Mbe/st
1075	4136-8020	F. H. Jockel	Moody Drilling Co., Inc.	1954	H	1230	S	Mo/sh
1076	4136-8020	J. T. Gallaher	Max Hickernell	1972	H	1170	S	Mcu/ss
1077	4136-8021	R. R. Jackson	Moody Drilling Co., Inc.	1955	H	1220	S	Mo/sh
1078	4136-8021	Robert Alter	do.	1955	H	1260	S	Mbe/st
1079	4136-8022	Robert Dallish	do.	1964	H	1055	S	Qo/sdgv
1080	4136-8022	Joe Rendulic and Bros.	Max Hickernell	1963	H	1130	S	Mcu/ss
1081	4136-8025	Richard Craig	Berkley D. Bossard	1973	H	1064	S	Mcu/ss
1082	4136-8026	E. E. Pfoh	Lininger Drilling & Pumps	1968	H	1101	S	Mcu/ss
1083	4136-8026	Frank Valencic	do.	1971	H	1032	S	Dco/st
1084	4136-8027	M. H. Rhoades	Max Hickernell	1964	H	1092	S	Mcu/ss
1085	4137-8007	R. O. Hall	do.	1966	H	1230	S	Dco/sh
1086	4136-8028	R. L. Griggs	Lininger Drilling & Pumps	1961	H	1100	S	Mcu/ss
1090	4137-8007	D. J. Shreve	Max Hickernell	1966	H	1200	S	Dco/st
1091	4134-8007	Dr. David Dunn	do.	1966	H	1122	S	Qo/gr
1093	4136-8029	C. B. Breauninger	do.	1962	H	1058	S	Dco/ss
1094	4136-8029	Daniel Wilson	Moody Drilling Co., Inc.	1965	H	1042	S	Dco/ss
1096	4136-8029	G. F. Linn	do.	1964	H	1068	H	Dco/st
1097	4136-8030	John Baltz	do.	1955	H	1022	S	Dco/st
1098	4136-8030	Robert Denmark	do.	1964	H	1010	S	Dco/sh
1101	4137-8007	T. V. Yoder	do.	1964	H	1405	S	Mcu/ss
1102	4138-8007	F. L. Blanchard	Max Hickernell	1969	H	1522	S	Msh/st
1103	4139-8007	Crawford Co. Fair	do.	1969	H	1556	S	Msh/st
1104	4137-8007	W. A. Mushrush	do.	1964	H	1402	S	Msh/st
1107	4137-8008	Byron Brink & Sons	do.	1969	H	1345	S	Mcu/ss
1109	4137-8007	Robert Hartzell	do.	1960	H	1378	S	Msh/st
1110	4137-8008	Sam Marceca	Moody Drilling Co., Inc.	1963	N	1370	S	Msh/st
1111	4136-8008	Horstman Builders Inc.	Max Hickernell	1969	P	1325	S	Mcu/ss

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
131	131	4	---	80	6/49	20	2.0	---	---	---	Cw-1005
91	23	6	41;60;82	28	---	15	---	---	---	---	1008
90	87	6	88	40	2/64	5	---	---	---	---	1011
77	77	6	---	6	1/58	10	---	---	---	---	1012
114	18	6	70;111	55	3/69	20	1.3	---	---	---	1013
84	84	9	---	10	5/58	16	.90	---	---	---	1014
107	107	6	104	35	3/64	20	2.0	---	---	---	1015
80	36	8	---	30	4/53	60	---	---	---	---	1017
113	70	7	---	45	3/56	10	---	---	---	---	1018
142	106	6	---	85	2/61	15	---	---	---	---	1019
102	77	7	---	70	6/68	40	3.3	---	---	---	1021
180	22	6	---	25	10/53	0.5	---	---	---	---	1022
229	111	6	110;160	27	12/63	2	---	---	---	---	1024
132	47	6	127	85	8/69	12	.40	---	---	---	1025
93	28	6	---	40	8/68	10	.08	---	---	---	1026
88	50	6	19;28	30	1/70	10	.24	---	---	---	1027
63	46	6	12;54	12	4/69	25	1.6	---	---	---	1028
152	115	6	95;140	31	5/64	2	.02	---	---	---	1029
340	306	6	301	42	9/65	50	.17	---	---	---	1030
231	231	6	134;227	40	10/63	12	---	---	---	---	1031
33	28	6	18	5	10/63	40	4.0	---	---	---	1033
147	---	6	130	120	9/69	7	---	---	---	---	1034
261	261	5	258	40	6/66	10	.33	---	---	---	1035
150	150	6	---	32	11/64	12	.10	---	---	---	1045
66	66	7	62	45	4/65	20	---	---	---	---	1046
98	98	6	94	35	7/65	20	.80	---	---	---	1047
67	67	6	---	30	6/62	13	---	---	---	---	1048
134	94	7	---	80	11/57	15	---	11	400	---	1049
215	80	8	143	55	3/73	2	---	12	5000	---	1050
28	24	6	24	7	5/63	30	6.0	---	---	---	1051
63	32	6	54	30	6/69	20	---	---	---	---	1053
105	105	6	---	3	10/64	7	3.5	---	---	---	1055
241	241	6	---	5	8/59	20	---	---	---	---	1057
197	197	6	185	30	8/72	20	1.0	---	---	---	1058
148	99	6	35;120	67	9/72	40	1.0	8	360	8.0	1059
151	32	6	---	54	6/64	---	---	---	---	---	1060
77	43	8	---	40	11/57	20	---	---	---	---	1061
183	35	8	---	72	10/52	60	7.5	---	---	---	1062
51	30	7	34	25	10/60	25	25	---	---	---	1063
80	53	7	---	50	7/51	10	---	---	---	---	1064
138	---	---	62;126	94	8/67	7	---	---	---	---	1065
80	50	7	---	30	---	---	---	---	---	---	1066
54	44	5	---	18	8/49	10	.59	---	---	---	1067
62	38	5	---	25	6/50	10	---	---	---	---	1068
352	81	6	---	103	---	30	.12	---	---	---	1069
168	22	6	140	120	9/67	20	---	---	---	---	1070
95	21	7	41;82	8	9/67	7	---	---	---	---	1071
203	38	6	155	155	10/64	15	.31	---	---	---	1072
55	35	8	38;46	15	6/62	15	---	---	---	---	1074
100	22	7	---	10	7/54	2	---	10	650	---	1075
150	78	6	80	69	9/72	18	13	12	425	7.8	1076
65	19	7	---	16	4/55	8	---	---	---	---	1077
150	21	8	---	18	12/55	50	---	---	---	---	1078
61	61	6	---	25	7/64	10	.40	---	---	---	1079
134	35	8	95;117;126	90	9/63	25	2.5	---	---	---	1080
46	46	6	19	13	5/63	20	6.7	---	---	---	1081
86	---	4	---	46	11/68	6	6.0	---	---	---	1082
57	8	8	---	18	10/71	8	.66	---	---	---	1083
61	37	6	41;52;58	23	2/64	30	---	---	---	---	1084
99	68	6	55	25	7/66	7	---	---	---	---	1085
73	35	7	---	40	2/61	14	.78	---	---	---	1086
127	57	6	120;125	45	8/66	5	---	---	---	---	1090
68	68	7	68	16	8/66	12	---	---	---	---	1091
77	30	7	45;65	14	2/62	4	---	---	---	---	1093
67	20	6	60;67	15	4/65	6	.12	---	---	---	1094
107	42	6	---	10	5/64	15	---	---	---	---	1096
70	19	6	---	20	7/55	5	---	---	---	---	1097
121	20	6	16;92	---	---	2	---	---	---	---	1098
226	32	6	103;137	165	8/64	5	---	---	---	---	1101
155	115	6	24;90;148	103	8/69	20	10	---	---	---	1102
246	20	8	62:96;124;228	160	7/69	20	---	---	---	---	1103
132	---	6	108	100	3/64	15	15	---	---	---	1104
208	158	6	184;203	120	5/69	22	1.1	---	---	---	1107
140	31	7	110	78	12/60	7	.11	---	---	---	1109
130	28	8	---	80	8/63	40	2.0	---	---	---	1110
180	44	10	125	90	3/69	130	14	---	---	---	1111

TABLE 6.

Well location								
Number	Lat-Long	Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Cw-1114	4137-8008	R. D. Gourley	Moody Drilling Co., Inc.	1954	H	1350	S	Mcu/ss
1115	4137-8008	W. R. Gehrt	do.	1960	H	1370	S	Mcu/ss
1116	4137-8008	E. W. Nichols	Max Hickernell	1965	H	1365	S	Msh/st
1117	4137-8008	Karl Thummler	Moody Drilling Co., Inc.	1963	H	1270	S	Mcu/ss
1120	4135-8008	C. R. Hartman	Max Hickernell	1968	H	1090	S	Dco/st
1121	4137-8009	Steere Dairy	Moody Drilling Co., Inc.	1949	C	1150	S	Dco/sh
1122	4137-8009	Bob Brant Volkswagon Inc.	do.	1956	H	1070	T	Qo/sdgv
1123	4139-8007	Gerald Yoest	Raymond L. Butterfield	1968	H	1478	S	Msh/st
1124	4139-8007	Frank Anselmo	do.	1968	H	1490	S	Msh/st
1131	4137-8010	Kerrtown Sch.	Moody Drilling Co., Inc.	---	T	1088	T	Qo/gr
1134	4137-8011	Vernon Twp.	do.	1965	U	1410	H	Mcu/ss
1135	4137-8011	Louis DeCoudres	do.	---	H	1165	S	Qo/gr
1136	4130-8025	Jerry McKnight	Berkley O. Bossard	1968	H	1281	S	Msl/ss
1137	4131-8028	Pa. Dept. of Forests and Waters	Max Hickernell	1968	P	1022	S	Mcu/ss
1138	4131-8029	do.	do.	1967	P	1022	S	Mcu/ss
1139	4131-8029	do.	do.	1967	P	1021	S	Mcu/ss
1140	4137-8011	United Presbyterian Redeemer Ch.	Moody Drilling Co., Inc.	1954	H	1402	H	Msh/st
1145	4142-8007	Crawford Co. Home	do.	1970	P	1122	T	Qo/sdgv
1147	4142-8007	C. D. Reichel	Max Hickernell	1970	H	1152	S	Qo/gr
1152	4137-8012	W. C. Hoy	Moody Drilling Co., Inc.	1964	H	1420	H	Msh/st
1153	4137-8012	C. J. Razniata	do.	1949	H	1390	H	Msh/st
1155	4140-8008	Richard Cole	Max Hickernell	1969	H	1372	S	Mcu/ss
1163	4145-8007	P. G. Marly	do.	1968	H	1284	S	Qo/gr
1164	4140-8008	Audrey Larson	Herbert G. Orr	1967	H	1362	S	Mcu/ss
1165	4137-8015	W. S. Murray	Max Hickernell	1965	H	1150	S	Qo/gr
1166	4137-8015	Sousa Realty	Berkley D. Bossard	1973	H	1170	S	Qo/gr
1167	4137-8015	W. C. Senger	Moody Drilling Co., Inc.	1947	H	1155	S	Mcu/ss
1168	4137-8016	Conneaut Lake Sand and Gravel Inc.	do.	1960	N	1250	H	Qo/gr
1169	4137-8016	do.	do.	1960	U	1180	S	Qt/c
1170	4137-8016	Sunnyside Church	do.	1956	H	1230	S	Qo/sdgv
1176	4137-8017	Harold Dupree	Max Hickernell	1965	H	1140	S	Mcu/st
1177	4137-8017	Stanley Cuculic	do.	1962	H	1125	S	Dco/sh
1178	4137-8018	James Herckstein	Berkley D. Bossard	1971	H	1082	T	Qo/gr
1180	4140-8007	Bernard Wise	Max Hickernell	1966	H	1342	H	Qo/gr
1181	4137-8019	William Monnie	Moody Drilling Co., Inc.	1950	H	1121	H	Mcu/ss
1182	4136-8019	Henrietta Campbell	R. E. Mohr Well Drilling	1968	H	1125	S	Mcu/ss
1183	4137-8019	Ralph Moss	Moody Drilling Co., Inc.	1950	H	1092	S	Mcu/ss
1184	4137-8019	T. E. Sherbondy	Max Hickernell	1960	H	1110	S	Mcu/ss
1185	4137-8019	Donald Stallard	Moody Drilling Co., Inc.	1956	H	1105	S	Mcu/ss
1186	4140-8009	Allen Gibson	Max Hickernell	1967	H	1208	S	Dco/sh
1187	4137-8019	Norgas	Moody Drilling Co., Inc.	1952	H	1094	S	Mcu/ss
1189	4137-8020	Alvin Kimple	Max Hickernell	1965	H	1172	S	Mbe/st
1190	4141-8009	French Creek Valley Saddle Club	do.	1969	H	1248	S	Dco/sh
1191	4141-8008	Stanley Petruso	do.	1969	H	1245	S	Dco/ss
1192	4137-8021	F. T. VanZandt	Berkley O. Bossard	1972	H	1230	S	Mcu/ss
1193	4137-8021	V. H. Gartler	Max Hickernell	1963	H	1210	S	Mbe/st
1194	4137-8027	V. A. Frank	Moody Drilling Co., Inc.	1963	H	1058	H	Dco/ss
1195	4137-8029	Robert Addis	Lininger Drilling & Pumps	1973	H	1030	S	Dco/sh
1196	4137-8029	A. J. Barabas	Moody Drilling Co., Inc.	1963	I	1052	S	Dco/sh
1197	4141-8009	George Palmer	Max Hickernell	1968	H	1110	T	Dco/st
1198	4137-8007	Fiore Bergamasco	Berkley O. Bossard	1973	H	1285	S	Mcu/ss
1199	4137-8007	J. L. Jordan	Moody Drilling Co., Inc.	1954	H	1330	S	Mbe/ss
1200	4137-8007	Delaney Johnson	Max Hickernell	1963	H	1310	S	Mcu/ss
1201	4137-8007	Clyde Forsythe	Moody Drilling Co., Inc.	1953	H	1220	S	Dco/st
1203	4137-8007	George Dworshak	do.	1957	H	1290	S	Mcu/ss
1204	4137-8008	United Natural Gas. Co.	Max Hickernell	1962	C	1330	S	Mcu/ss
1205	4137-8008	Marcia Kahler	Moody Drilling Co., Inc.	1951	H	1320	S	Mcu/ss
1206	4137-8008	Edward Eells	do.	1956	H	1300	S	Mcu/ss
1207	4137-8008	E. E. Wilson	Max Hickernell	1973	H	1290	S	Mcu/ss
1208	4137-8009	E. C. Keller	Moody Drilling Co., Inc.	1964	H	1125	S	Dco/sh
1209	4133-8013	Joseph Miller	Berkley D. Bossard	1970	H	1120	S	Mbe/ss
1210	4137-8009	Loke DeCrapio	Moody Drilling Co., Inc.	1952	H	1175	S	Dco/st
1211	4137-8028	Robert Pello	Harland H. Knapp	1970	H	1048	S	Dco/st
1212	4137-8010	Clarence Roche	Max Hickernell	1960	H	1470	S	Mm/sh
1215	4133-8029	James Flajnik	Charles R. Smith	1970	H	1085	S	Mcu/st
1216	4141-8020	L. J. Zicarelli	Max Hickernell	1970	H	1035	S	Qo/gr
1217	4137-8010	Homer Peterson	do.	1966	H	1350	S	Msh/st
1218	4137-8011	Esso Oil Co.	Lininger Drilling & Pumps	1971	C	1272	S	Mcu/ss
1220	4137-8012	E. F. Saegar	Moody Drilling Co., Inc.	1964	H	1388	H	Msh/st
1225	4137-8012	Paul Schwab	Max Hickernell	1961	H	1365	S	Msh/st
1227	4137-8012	T. J. Bach	do.	1963	H	1352	S	Msh/st
1228	4137-8013	Richard Foreman	do.	1973	H	1376	S	Msh/st
1229	4137-8013	Whispering Pines Golf Course	do.	1969	C	1386	S	Msh/st
1230	4137-8013	Vernon Grange	Moody Drilling Co., Inc.	1956	H	1381	S	Msh/st

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hardness (gpg)	Specific conductance (micromhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
149	149	7	---	117	4/54	10	---	---	---	---	Cw-1114
162	162	6	---	140	8/60	15	---	---	---	---	1115
107	70	6	81;93	55	2/65	15	.60	---	---	---	1116
123	27	6	---	60	4/63	15	.60	---	---	---	1117
115	---	6	98;112	50	10/68	20	.44	---	---	---	1120
251	22	8	---	70	4/49	4	---	---	---	---	1121
75	75	8	---	18	7/56	20	---	---	---	---	1122
72	22	6	30;68	20	10/68	20	2.0	---	---	---	1123
81	30	6	30;78	20	10/68	60	6.0	---	---	---	1124
49	49	12	---	12	4/58	20	---	---	---	---	1131
367	48	6	97;215	56	1/65	38	---	---	---	---	1134
82	35	6	41	35	8/59	30	---	---	---	---	1135
65	---	6	48	27	10/68	30	1.7	---	---	---	1136
80	36	7	43	15	12/68	50	1.4	---	---	---	1137
80	45	7	46	15	12/67	50	1.1	---	---	---	1138
200	35	8	---	13	4/67	76	34	---	---	---	1139
65	40	7	---	20	9/54	10	---	---	---	---	1140
63	58	8	50	10	6/70	200	8.8	---	---	---	1145
83	83	6	78	55	7/70	15	---	---	---	---	1147
136	30	6	---	32	9/64	15	.14	---	---	---	1152
128	77	5	---	19	1/49	2	.02	---	---	---	1153
117	27	6	97	90	9/69	10	---	---	---	---	1155
43	43	8	38	17	3/68	100	5.0	---	---	---	1163
100	---	6	30;60;95	50	8/67	35	1.2	---	---	---	1164
82	82	6	79	30	7/65	5	---	---	---	---	1165
83	83	6	79	20	1/73	20	.80	---	---	---	1166
40	33	4	30	6	6/47	10	.42	---	---	---	1167
132	129	8	---	28	9/60	60	---	---	---	---	1168
75	71	8	---	8	8/60	1	---	---	---	---	1169
90	90	7	---	30	8/56	8	---	---	---	---	1170
61	18	7	54	10	9/65	5	---	---	---	---	1176
51	29	7	34	17	5/62	7	---	---	---	---	1177
68	68	6	60	6	5/71	25	6.2	---	---	---	1178
86	86	6	85	60	10/66	10	---	---	---	---	1180
56	30	6	---	30	9/50	10	---	---	---	---	1181
77	46	7	---	35	8/68	40	40	---	---	---	1182
43	40	7	---	4	8/50	60	---	---	---	---	1183
53	51	7	53	18	---	20	1.0	---	---	---	1184
60	55	7	---	15	10/56	10	---	---	---	---	1185
106	---	6	58;79	29	4/67	20	---	---	---	---	1186
70	58	7	---	16	8/52	40	---	---	---	---	1187
60	33	7	48;55	18	4/65	10	---	---	---	---	1189
74	40	7	62	18	6/69	8	---	---	---	---	1190
129	51	7	73;108	60	6/69	6	---	---	---	---	1191
128	41	6	20;40;103	60	8/72	40	1.0	---	---	---	1192
103	24	6	61;92	30	6/63	5	.07	---	---	---	1193
65	20	6	---	8	5/63	7	---	---	---	---	1194
125	22	---	---	20	1/73	2	.02	---	---	---	1195
175	22	6	---	8	9/63	4	.02	---	---	---	1196
80	40	6	37;68	24	12/68	4	---	---	---	---	1197
84	48	6	62	50	4/73	20	1.3	---	---	---	1198
108	47	7	---	68	8/54	15	---	---	---	---	1199
104	63	6	81	70	11/63	20	2.8	---	---	---	1200
110	23	7	---	30	9/53	5	---	---	---	---	1201
138	90	7	---	70	12/57	10	---	---	---	---	1203
141	24	7	64;111;126	38	12/62	16	---	---	---	---	1204
118	19	7	---	40	9/51	10	---	---	---	---	1205
121	36	8	---	60	8/56	15	---	---	---	---	1206
176	28	6	90	70	2/73	5	---	---	---	---	1207
150	31	6	17;38;85	29	9/64	5	.04	---	---	---	1208
85	38	6	70	30	10/70	14	.35	---	---	---	1209
62	18	7	---	25	6/52	10	---	---	---	---	1210
65	26	7	60	4	12/70	12	.33	---	---	---	1211
40	23	7	35	F	7/60	35	1.8	---	---	---	1212
72	30	6	50;65	8	11/70	15	.68	---	---	---	1215
35	34	6	32	F	11/70	20	---	---	---	---	1216
70	22	---	55;62	35	5/66	6	---	---	---	---	1217
125	32	8	---	52	9/71	25	1.9	---	---	---	1218
75	22	6	---	4	5/64	6	.08	---	---	---	1220
60	23	8	30;56	21	8/61	5	.13	---	---	---	1225
64	34	6	32;53;62	25	7/63	5	.13	---	---	---	1227
81	18	6	34;61	4	2/73	20	---	---	---	---	1228
82	20	6	41;73	10	7/69	25	---	---	---	---	1229
100	18	8	---	30	10/56	20	---	---	---	---	1230

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-1231	4137-8013	A. J. Alex	Moody Drilling Co., Inc.	1964	H	1351	S	Msh/st
1232	4137-8014	Harry Krider	Max Hickernell	1960	H	1341	S	Msh/st
1236	4137-8014	H. H. DeGrange	Berkley D. Bossard	1971	S	1265	S	Mcu/ss
1237	4137-8017	James Baldwin	do.	1973	H	1092	S	Dco/sh
1238	4137-8017	R. L. Hubbard	Moody Drilling Co., Inc.	1958	H	1220	S	Msh/st
1239	4137-8018	J. A. Norton	do.	1963	H	1095	S	Qo/sdgv
1240	4137-8018	Carl Anderson	do.	1963	H	1110	S	Qo/sdgv
1241	4137-8019	LaBruzzo's Port O Call	Max Hickernell	1961	C	1085	T	Qo/gr
1242	4137-8019	Gardens Motel	Berkley D. Bossard	1971	C	1083	T	Qo/gr
1243	4142-8027	Howard Flickinger	Max Hickernell	1971	H	1160	H	Mcu/ss
1245	4137-8020	John Beatty	do.	1963	H	1112	S	Mcu/ss
1246	4137-8021	M. S. Viola	Moody Drilling Co., Inc.	1955	H	1132	S	Mcu/ss
1247	4137-8022	Franklin Zickefoose	Max Hickernell	1960	H	1112	S	Dco/sh
1248	4137-8023	Roy Bartges, Jr.	Moody Drilling Co., Inc.	1950	H	1090	S	Dco/st
1249	4149-8011	Norman Seip	Boyd Lee Hall	1970	H	1365	S	Dco/sh
1250	4149-8012	do.	do.	1971	H	1385	H	Dco/sh
1251	4138-8007	Johnie's Drive-In	Moody Drilling Co., Inc.	1951	C	1220	S	Dco/st
1252	4150-8013	J. R. Anderson	Boyd Lee Hall	1971	H	1242	S	Dco/sh
1253	4146-8016	George Slivka	Max Hickernell	1971	H	1124	S	Dco/sh
1254	4150-8013	David Akins	do.	1971	H	1190	S	Dco/sh
1255	4138-8007	Ambrose Schlipf	do.	1972	H	1435	S	Msh/st
1256	4138-8007	L. E. Wagner	do.	1965	H	1405	S	Msh/st
1257	4138-8007	Clinton Smith	do.	1972	H	1450	S	Msh/st
1258	4138-8008	J. B. Damico	Moody Drilling Co., Inc.	1960	H	1270	S	Msh/ss
1259	4138-8008	Spencer Hospital	do.	1965	---	1135	S	Dco/sh
1260	4138-8009	Russell Hughes	do.	1965	H	1115	S	Dco/sh
1261	4138-8009	G. C. Murphy Co.	do.	---	A	1092	T	Qo/sdgv
1262	4138-8009	Robert Nordberg	do.	1956	H	1155	S	Dco/st
1263	4138-8009	T & R Bar	do.	1955	C	1101	T	Qo/sdgv
1264	4138-8009	Eugene Schreffler	do.	1963	---	1072	T	Qo/gr
1266	4133-8021	Albert Helderlein	Berkley D. Bossard	1971	H	1120	S	Qt/gr
1267	4134-8023	W. C. Orr	Max Hickernell	1971	H	1095	S	Mbe/st
1268	4129-8014	Chester Rambo	Berkley D. Bossard	1971	H	1296	H	Msl/ss
1269	4138-8010	John Robinson	Moody Drilling Co., Inc.	1947	H	1240	S	Mcu/ss
1270	4138-8010	T. D. Hughes	do.	1954	H	1128	S	Dco/st
1272	4144-8013	Charles Hoegerl	Max Hickernell	1970	H	1100	T	Qo/gr
1273	4138-8010	Dominic Petruso	do.	1972	H	1183	S	Dco/sh
1274	4138-8010	Charles Carrol	Moody Drilling Co., Inc.	1958	H	1240	S	Dco/st
1275	4138-8010	D. M. Irwin	do.	1951	H	1180	S	Dco/st
1276	4138-8010	C. E. Leffingwell	do.	1957	H	1165	S	Dco/st
1278	4138-8010	Charles Cronin	do.	1960	H	1130	S	Dco/sh
1280	4138-8011	James Miller	do.	1954	H	1140	S	Dco/st
1282	4138-8011	Charles Bortner	Max Hickernell	---	H	1116	S	Dco/st
1284	4138-8012	Joseph Percy	Moody Drilling Co., Inc.	1954	H	1222	S	Mcu/ss
1286	4138-8012	L. L. Worden	do.	---	H	1218	T	Dco/sh
1287	4138-8012	do.	do.	1957	H	1216	T	Qo/gr
1288	4138-8012	W. A. Latta	do.	1955	H	1226	S	Qo/gr
1289	4138-8012	W. J. Merchbaker	do.	1956	H	1229	S	Qo/gr
1290	4138-8012	Bollard's Dairy Isle	do.	1958	C	1215	S	Dco/sh
1292	4138-8012	William Irlam	Max Hickernell	1960	H	1172	S	Dco/sh
1293	4138-8013	L. H. Reagle	do.	1972	H	1322	S	Qo/gr
1294	4138-8013	R. J. Brunot	do.	1965	H	1311	H	Mcu/ss
1296	4131-8011	Juanita Tingley	do.	1971	C	1305	S	Msh/ss
1297	4133-8013	E. U. B. Parsonage	Berkley D. Bossard	1971	H	1138	S	Msh/st
1298	4134-8013	Buddy's Dog Food	do.	1971	C	1072	T	Mcu/st
1299	4138-8013	R. C. Winters	Max Hickernell	1965	H	1340	S	Msh/st
1300	4133-8013	Marlin Anthony	Berkley D. Bossard	1971	H	1081	S	Mbe/st
1301	4133-8015	Clifford Shuffstall	do.	1971	H	1142	S	Mbe/st
1303	4145-8008	R. N. Brown	Max Hickernell	1971	H	1248	W	Qo/gr
1304	4138-8013	J. E. Flint	do.	1961	H	1340	S	Msh/st
1305	4141-8016	Gary Fernberg	do.	1971	H	1393	H	Msh/st
1306	4140-8015	J. S. Zuver	do.	1971	H	1318	S	Mcu/ss
1307	4141-8012	L. H. Brown	do.	1971	H	1093	T	Qo/gr
1308	4141-8011	E. J. Baker	do.	1971	H	1280	S	Mcu/ss
1310	4140-8012	H. W. Koehler	do.	1971	H	1125	S	Dco/sh
1311	4140-8015	Perry Rubner	do.	1971	H	1340	S	Mbe/st
1313	4141-8011	D. G. Denison	do.	1971	H	1245	S	Dco/st
1314	4138-8013	D. S. Phillips	do.	1962	H	1382	S	Msh/st
1315	4144-8014	John Yocina	do.	1971	H	1155	S	Dco/sh
1316	4144-8014	C. W. Marsteller	do.	1970	H	1145	S	Dco/sh
1317	4143-8010	L. L. Porter	do.	1971	H	1265	S	Dco/sh
1319	4144-8015	Eugene Barchfield	do.	1971	H	1310	H	Mcu/ss
1320	4138-8013	William Unger	Moody Drilling Co., Inc.	1952	H	1370	S	Msh/st
1322	4138-8014	Bruno Roda	Max Hickernell	1967	H	1310	S	Qo/gr
1323	4139-8015	K. L. Phillips	Raymond L. Butterfield	1971	H	1282	S	Qo/gr
1324	4143-8013	Darla Consla	Max Hickernell	1971	H	1100	T	Qo/gr
1325	4136-8029	John Molke	Harland H. Knapp	1971	H	1062	S	Dco/st
1326	4135-8026	Lawrence Henry	---	1971	H	1132	S	Mbe/st
1328	4138-8014	E. J. Lance	Max Hickernell	---	H	1315	S	Qo/gr
1329	4138-8014	Marian Youngkin	do.	1964	H	1332	S	Mo/sh
1330	4138-8014	S. N. Chapin	do.	1961	H	1348	H	Qo/gr

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
97	25	7	---	35	9/54	8	---	---	---	---	Cw-1231
125	---	6	114	---	---	20	---	---	---	---	1232
103	70	6	75;93	37	9/71	17	.40	12	330	7.6	1236
158	133	6	66;119	10	3/73	2	.02	18	3500	---	1237
63	55	8	---	20	4/58	20	---	---	---	---	1238
112	108	6	---	30	6/63	8	---	---	---	---	1239
104	96	6	83	57	10/63	10	.30	---	---	---	1240
57	57	7	52	9	4/61	50	2.3	---	---	---	1241
53	53	8	36	9	2/71	30	2.7	---	---	---	1242
60	24	8	30;56	15	3/71	60	12	---	---	---	1243
53	52	6	44	40	12/63	15	---	---	---	---	1245
103	42	7	---	45	8/55	30	---	---	---	---	1246
130	104	7	211	48	12/60	3	.04	---	---	---	1247
124	88	7	---	23	9/50	5	---	---	---	---	1248
114	42	10	45;104	10	12/70	14	.35	---	---	---	1249
134	19	8	20;75;130	6	4/71	---	---	---	---	---	1250
130	46	8	---	26	7/51	60	1.8	---	---	---	1251
62	31	12	30;60	8	6/71	6	.12	---	---	---	1252
77	30	6	27;68	18	8/71	8	---	---	---	---	1253
35	30	6	30	14	9/71	12	---	---	---	---	1254
105	32	6	72;91	48	7/72	20	---	---	---	---	1255
74	18	6	26;42;66	23	8/65	5	---	---	---	---	1256
105	32	6	49;71;90	38	7/72	30	---	---	---	---	1257
132	17	7	---	100	10/60	8	---	---	---	---	1258
45	---	12	---	---	---	---	---	---	---	---	1259
200	32	6	---	52	10/65	0.5	---	---	---	---	1260
250	240	8	---	---	---	---	---	---	---	---	1261
125	30	8	---	32	8/56	1	---	---	---	---	1262
48	48	6	---	8	7/55	20	---	---	---	---	1263
116	116	6	---	16	11/63	5	1.2	---	---	---	1264
70	32	6	33	11	6/71	4	.20	---	---	---	1266
80	38	6	65	25	10/71	20	1.0	---	---	---	1267
66	24	6	15;48;59	36	7/71	8	.36	---	---	---	1268
80	13	4	---	30	9/47	5	.12	---	---	---	1269
96	23	8	---	45	9/54	8	---	---	---	---	1270
51	51	6	45	0	11/70	20	---	---	---	---	1272
180	20	8	79;135	45	6/72	15	---	---	---	---	1273
55	21	6	---	37	6/58	0	---	---	---	---	1274
135	20	---	---	50	8/51	4	---	---	---	---	1275
119	24	6	---	55	11/57	10	---	---	---	---	1276
102	48	6	---	50	3/60	20	---	---	---	---	1278
80	18	7	---	17	10/54	20	.71	---	---	---	1280
87	31	8	49;61;83	28	11/63	25	1.1	---	---	---	1282
72	35	7	---	30	9/54	25	---	---	---	---	1284
185	39	6	---	20	---	---	---	---	---	---	1286
33	33	6	---	15	4/57	24	---	---	---	---	1287
81	81	6	---	20	7/55	20	---	---	---	---	1288
92	92	7	---	35	10/56	20	---	---	---	---	1289
120	86	7	---	60	2/58	12	---	---	---	---	1290
130	---	7	105	45	12/60	2	.03	---	---	---	1292
185	185	6	178	125	4/72	15	.75	---	---	---	1293
133	95	6	92;130	50	11/65	15	---	---	---	---	1294
220	200	5	205;210;215	80	3/71	20	1.0	---	---	---	1296
40	25	6	19;35	12	5/71	7	.39	---	---	---	1297
62	---	---	---	10	7/71	---	---	---	---	---	1298
69	31	6	35;64	12	4/65	8	---	---	---	---	1299
20	20	6	7;14	---	10/71	10	1.1	---	---	---	1300
111	---	6	80	---	11/71	20	---	---	---	---	1301
28	28	6	24	9	10/71	10	1.0	---	---	---	1303
74	38	7	38;64	20	11/61	20	4.0	---	---	---	1304
45	35	6	40	5	8/71	20	1.0	---	---	---	1305
175	77	6	130;165	100	8/71	20	.50	---	---	---	1306
40	40	6	40	F	8/71	10	---	---	---	---	1307
80	25	8	60	3	8/71	10	---	---	---	---	1308
60	24	6	40	10	9/71	20	2.0	---	---	---	1310
125	44	6	105;120	60	8/71	10	.20	---	---	---	1311
64	16	6	38;60	35	7/71	12	.80	---	---	---	1313
74	42	7	56	18	3/62	20	.71	---	---	---	1314
94	53	8	65;79	25	6/71	5	.08	---	---	---	1315
88	40	6	50;80	20	6/71	20	.50	---	---	---	1316
78	29	6	65	18	7/71	20	1.7	---	---	---	1317
100	35	6	70	70	5/71	20	2.0	---	---	---	1319
44	27	7	---	9	11/52	10	---	---	---	---	1320
90	90	6	---	36	1967	9	---	---	---	---	1322
137	137	6	---	50	2/71	5	.07	---	---	---	1323
63	63	6	58	0	2/71	20	---	---	---	---	1324
100	29	7	26;45	12	1/71	15	.39	---	---	---	1325
52	18	6	45	2	5/71	7	.18	---	---	---	1326
170	156	8	---	90	---	6	---	---	---	---	1328
127	84	6	80	7	4/64	5	.04	---	---	---	1329
50	50	7	45	20	9/61	10	.33	---	---	---	1330

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ litholog
Number	Lat-Long							
Cw-1331	4138-8015	T. F. Etter	Max Hickernell	1961	H	1280	S	Qo/gr
1332	4138-8015	E. D. Bennett	Moody Drilling Co., Inc.	1964	H	1240	S	Mcu/ss
1334	4138-8015	M. P. Breckenridge	Berkley D. Bossard	1971	H	1330	S	Msh/st
1335	4138-8015	F. M. Hall	do.	1969	H	1238	W	Mbe/st
1336	4135-8029	J. G. Gitas	---	1971	H	1100	S	Mcu/ss
1337	4134-8029	Thomas Herbster	Harland H. Knapp	1971	H	1095	S	Mbe/st
1339	4136-8029	W. C. Roberts	---	1971	H	1022	S	Dco/st
1340	4138-8017	R. D. Sturges	Moody Drilling Co., Inc.	1969	H	1144	S	Dco/st
1342	4138-8018	Elliot Lindquist	do.	1957	H	1088	S	Qo/gr
1343	4136-8029	W. A. Welsh	---	1971	H	1038	S	Dco/st
1344	4136-8029	Martin Davis	Max Hickernell	1971	H	1035	S	Dco/sh
1345	4138-8018	M. J. Kunis	Moody Drilling Co., Inc.	1949	H	1092	S	Dco/sh
1346	4137-8029	W. A. Humes	---	1971	H	1040	H	Dco/st
1347	4135-8030	C. W. Rhodes	---	1971	H	1040	S	Dco/st
1348	4138-8018	Robert Barkus	Max Hickernell	1963	H	1076	T	Qo/gr
1349	4136-8027	Joseph Hirschman	do.	1971	H	1080	S	Mcu/ss
1350	4136-8029	Glenn Linn	do.	1971	H	1062	S	Mcu/ss
1351	4138-8018	Donald Foust	do.	1965	H	1089	S	Qo/gr
1352	4138-8018	Jack Fox	Moody Drilling Co., Inc.	1964	H	1075	T	Qo/gr
1353	4140-8022	T. E. Anderton	do.	1965	H	1222	S	Mcu/ss
1355	4140-8024	Charles Koppelt	Berkley D. Bossard	1971	H	1200	S	Mcu/ss
1356	4140-8030	T. C. Miller	Max Hickernell	1971	H	1022	H	Dco/sh
1357	4138-8018	Lucille Kinch	Moody Drilling Co., Inc.	1952	H	1100	S	Dco/sh
1358	4138-8018	Park Golf Course, Inc.	Berkley D. Bossard	1968	---	1082	T	Qo/sdgv
1359	4138-8019	T. G. Uram	Moody Drilling Co., Inc.	1965	H	1105	S	Dco/sh
1360	4138-8019	J. E. Morohovich	Max Hickernell	1964	H	1138	H	Dco/sh
1361	4138-8019	Joseph Thomas	do.	1972	H	1116	S	Mcu/ss
1362	4138-8020	Fannie Trunick	Moody Drilling Co., Inc.	1954	H	1080	T	Qo/gr
1363	4138-8020	Edward Patton	do.	1950	H	1103	T	Dco/st
1364	4138-8020	K. L. Barstow	Max Hickernell	1962	H	1094	S	Dco/sh
1365	4138-8021	P. Krueger, Jr.	Moody Drilling Co., Inc.	1954	H	1120	S	Qo/gr
1366	4138-8021	Leroy Bell	do.	1951	H	1122	S	Qo/gr
1367	4138-8022	S. W. Chervenak	do.	1954	H	1207	S	Mcu/ss
1368	4138-8022	Ray Zarembinski	do.	1953	H	1225	S	Mcu/ss
1369	4138-8022	Karen Zarembinski	Max Hickernell	1972	H	1245	S	Mcu/ss
1370	4138-8023	---	do.	1965	H	1070	S	Qo/sdgv
1371	4138-8023	John Acklin	Berkley D. Bossard	1973	H	1140	S	Mcu/---
1372	4138-8018	Fairway 12 Motel	do.	1971	C	1082	T	Qo/gr
1373	4138-8019	Frank McKinley	do.	1971	C	1082	T	Qo/gr
1374	4137-8021	Jack Ream	do.	1971	P	1211	S	Mcu/ss
1375	4137-8017	V. J. Cantelupe	do.	1971	H	1090	S	Qo/sdgv
1376	4138-8023	D. C. Smith	do.	1969	H	1082	S	Mcu/ss
1377	4139-8007	W. E. Lynn	do.	1972	H	1495	S	Msh/ls
1378	4137-8017	Stable Pit and Pub	Max Hickernell	1971	C	1142	S	Dco/sh
1379	4139-8007	B. F. Graham	do.	1963	H	1517	S	Msh/st
1380	4138-8022	A. C. Butterfield	do.	1971	H	1207	S	Mbe/ss
1381	4138-8019	Grace Frey	do.	1972	H	1118	H	Dco/sh
1382	4137-8020	Gail Black	E. A. Hilliard	1971	H	1160	S	Mcu/ss
1383	4137-8020	D. A. Black	Max Hickernell	1971	H	1222	S	Mbe/st
1384	4136-8017	E. C. Yates	do.	1971	H	1122	H	Qo/gr
1385	4139-8007	E. H. Laderer	Moody Drilling Co., Inc.	1952	H	1550	S	Mm/st
1386	4139-8007	Richard Clark	Max Hickernell	1973	H	1520	S	Mm/sh
1387	4136-8020	J. R. Stahl	do.	1971	H	1148	H	Mcu/ss
1388	4137-8019	Conneaut Lake Fire Hall	do.	1971	C	1083	T	Qo/gr
1389	4137-8017	Merle Ferguson	Berkley D. Bossard	1971	H	1141	S	Dco/st
1390	4138-8023	G. C. Knott	Max Hickernell	1971	H	1040	S	Qo/gr
1391	4136-8018	Dorothy Hardie	do.	1971	H	1075	T	Qo/gr
1392	4139-8007	R. J. Switzer	do.	1963	H	1520	S	Msh/st
1393	4136-8020	Jack Griggs	do.	1971	H	1152	S	Mbe/ss
1394	4137-8017	Robert Prenatt	do.	1971	H	1151	S	Dco/st
1395	4139-8008	E. J. Limke	Moody Drilling Co., Inc.	1963	H	1485	S	Mm/sh
1396	4139-8008	F. L. Ewing	do.	1961	H	1410	S	Msh/st
1397	4139-8008	O. A. Kightlinger	do.	1948	H	1418	S	Msh/sh
1399	4139-8008	Angelo Furno	Max Hickernell	1964	H	1465	S	Msh/st
1400	4134-8028	Colonial Estates Assoc.	---	1971	H	1092	S	Mcu/ss
1401	4139-8009	E. F. Saeger	Moody Drilling Co., Inc.	1953	H	1212	S	Dco/st
1404	4139-8009	Webber-Harris Ford Inc.	do.	1964	U	1218	S	Dco/sh
1405	4133-8029	W. J. Baker	---	1971	H	1070	S	Mbe/st
1408	4134-8029	Wilbert Davis	Harland H. Knapp	1971	H	1095	H	Mcu/ss
1409	4139-8009	Lewis Myers, Jr.	Moody Drilling Co., Inc.	1954	H	1135	S	Dco/st
1412	4150-8022	J. F. Spearly	Berkley D. Bossard	1971	H	1058	S	Dco/sh
1413	4149-8021	T. J. Barron	Max Hickernell	1971	H	1142	S	Qo/gr
1414	4142-8019	Sandra Hughes	do.	1971	H	1300	S	Mbe/st
1415	4142-8016	A. R. Moore	do.	1971	H	1381	H	Msh/st
1416	4145-8017	G. L. Shimek, Jr.	do.	1971	H	1168	S	Qo/gr
1417	4140-8016	W. R. Irwin, Sr.	do.	1971	H	1361	S	Msh/st
1418	4139-8016	R. E. Mohra	do.	1971	H	1272	H	Mcu/ss
1419	4139-8022	G. R. Shorts	do.	1971	H	1210	S	Mcu/ss

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
75	75	7	70	22	11/61	12	.23	---	---	---	Cw-1331
151	106	6	110	80	7/64	7	---	---	---	---	1332
129	79	6	29;52;109	77	9/71	8	1.7	---	---	---	1334
67	42	6	19;55	12	11/69	35	2.7	---	---	---	1335
65	30	6	58	15	---	18	1.2	---	---	---	1336
57	37	7	40;52	10	6/71	25	---	---	---	---	1337
60	15	6	30;50	10	7/71	5	.11	---	---	---	1339
100	41	6	---	30	5/69	8	---	---	---	---	1340
92	91	6	---	7	6/57	20	---	---	---	---	1342
91	16	6	45	8	8/71	3	.04	---	---	---	1343
55	22	6	30;50	8	8/71	10	.31	---	---	---	1344
67	67	5	---	20	6/49	10	.66	---	---	---	1345
62	12	6	15;50	10	8/71	8	.18	---	---	---	1346
57	42	6	50	10	7/71	10	.25	---	---	---	1347
66	66	6	---	---	5/63	40	---	---	---	---	1348
57	25	6	38;49	30	9/71	20	---	---	---	---	1349
75	37	6	27;60	15	9/71	10	.20	---	---	---	1350
67	67	6	63	3	5/65	15	---	---	---	---	1351
165	165	6	165	4	8/64	10	.18	---	---	---	1352
97	78	6	52;78	59	8/71	25	2.3	12	350	8.0	1353
111	29	6	---	67	7/71	20	6.7	---	---	---	1355
65	50	6	55	40	10/71	3	.15	---	---	---	1356
107	103	7	---	20	2/52	10	---	---	---	---	1357
32	32	8	24	7	7/68	20	20	---	---	---	1358
52	45	6	---	17	12/65	---	---	---	---	---	1359
140	28	8	68;124	30	6/64	2	---	---	---	---	1360
103	26	6	48;72	---	---	8	---	---	---	---	1361
32	32	7	---	8	11/54	10	---	---	---	---	1362
109	42	5	---	8	7/50	3	---	---	---	---	1363
120	97	7	98;113	18	1/62	5	---	---	---	---	1364
128	128	7	---	30	1/54	30	2.0	---	---	---	1365
49	49	7	---	20	5/51	15	---	---	---	---	1366
130	51	7	---	97	10/54	20	---	---	---	---	1367
140	30	7	---	---	---	15	---	---	---	---	1368
150	21	6	138;143	---	---	15	---	---	---	---	1369
82	82	6	79	F	3/65	7	---	---	---	---	1370
95	47	6	35;60	44	---	50	3.1	---	---	---	1371
52	52	6	12;43;44	3	11/71	36	1.7	---	---	---	1372
56	56	6	47	11	11/71	25	4.2	---	---	---	1373
162	33	8	22;53;148	31	6/71	36	1.2	---	---	---	1374
82	80	6	---	12	11/71	6	.18	---	---	---	1375
43	40	6	25	19	10/69	12	4.0	---	---	---	1376
86	71	6	29;70	32	8/72	50	4.5	---	---	---	1377
156	37	10	45;90;140	38	2/71	13	---	---	---	---	1378
132	28	6	48;73;118	40	1/63	25	1.2	---	---	---	1379
105	33	6	58;89;92	28	12/71	10	---	---	---	---	1380
60	29	6	50	30	1/72	3	.12	---	---	---	1381
103	20	6	70;92	36	11/71	---	---	---	---	---	1382
80	31	6	32;65	15	5/71	20	.80	---	---	---	1383
195	195	6	170	50	5/71	25	.36	---	---	---	1384
114	37	7	---	50	3/52	15	---	---	---	---	1385
100	36	6	39;68;89	12	2/73	30	---	19	550	---	1386
97	40	6	72	40	9/71	20	.67	---	---	---	1387
42	42	8	38	8	6/71	40	5.0	---	---	---	1388
129	89	6	80;120	45	4/71	20	.40	---	---	---	1389
68	68	6	65	F	8/71	7	---	---	---	---	1390
66	66	6	60	3	9/71	20	.91	---	---	---	1391
120	19		63;90;108;115	38	7/63	30	6.0	---	---	---	1392
70	29	6	35;60	15	7/71	15	.38	---	---	---	1393
82	39	6	68	30	9/71	6	---	---	---	---	1394
59	59	8	---	15	8/63	15	---	---	---	---	1395
80	42	6	---	20	6/61	20	---	---	---	---	1396
70	21	5	---	4	4/48	2	.03	---	---	---	1397
66	29	6	38;61	20	2/64	15	---	---	---	---	1399
66	21	6	40;60	18	7/71	6	.14	---	---	---	1400
108	21	7	---	50	7/53	5	---	---	---	---	1401
503	30	6	30	45	12/64	0.5	---	---	---	---	1404
45	15	6	35	12	7/71	25	3.1	---	---	---	1405
88	14	7	50;82	48	12/71	8	.27	---	---	---	1408
110	19	8	---	45	10/54	40	1.3	---	---	---	1409
50	22	8	9;13	5	5/71	1	.02	---	---	---	1412
70	70	6	70	20	11/71	10	.25	---	---	---	1413
103	33	6	68;96	28	10/71	15	---	---	---	---	1414
52	23	6	20;45	5	5/71	20	1.0	---	---	---	1415
112	110	6	109	30	6/71	12	---	---	---	---	1416
65	40	8	45;58	20	5/71	12	---	---	---	---	1417
118	68	6	84;114	60	7/71	20	1.0	---	---	---	1418
105	95	6	96	50	7/71	20	.50	---	---	---	1419

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-1420	4141-8021	Paul Brown	Max Hickernell	1971	H	1250	S	Mbe/st
1421	4139-8023	James Wright	do.	1971	H	1192	S	Qo/gr
1422	4139-8009	Dee-Jays Restaurant	Moody Drilling Co., Inc.	1958	C	1228	S	Oco/sh
1423	4139-8010	Ernest Copeland	do.	1960	H	1105	S	Oco/sh
1424	4133-8007	A. O. Styer	Max Hickernell	1971	H	1472	H	Msl/ss
1425	4134-8009	Henry Rekas	do.	1971	H	1245	S	Mcu/ss
1426	4139-8010	J. A. Steele	do.	1961	H	1094	S	Qo/gr
1427	4139-8010	Margaret Cooper	do.	1965	H	1137	S	Oco/sh
1429	4136-8008	Kebert Construction Co.	Moody Drilling Co., Inc.	1970	N	1065	T	Qo/sdgv
1431	4136-8009	J. L. Randall	Max Hickernell	1971	H	1155	S	Qo/gr
1432	4135-8009	H. A. Freyermuth	do.	1971	H	1115	T	Oco/sh
1433	4135-8010	Goldie Bertschy	do.	1971	H	1190	S	Qo/gr
1435	4142-8030	Howard Roxberry	Thomas Stampin	1972	H	1130	S	Oco/sh
1436	4140-8030	B. R. Hoxie	do.	1972	H	1022	U	Oco/sh
1437	4138-8012	J. Kelyman	Max Hickernell	1971	H	1220	S	Oco/st
1447	4136-8015	Paul Sheckler	Berkley O. Bossard	1971	H	1163	S	Qo/gr
1448	4139-8011	W. A. Maziarz	Moody Drilling Co., Inc.	1959	H	1100	S	Oco/sh
1449	4139-8011	Margaret Onesky	do.	1956	H	1105	S	Oco/sh
1451	4138-8011	R. C. Boulton	Max Hickernell	1971	H	1155	S	Oco/sh
1452	4135-8011	William Lemish	do.	1971	H	1155	S	Oco/sh
1455	4137-8014	William Palka	do.	1971	H	1312	S	Msh/st
1457	4138-8014	Pete Hart	do.	1971	H	1342	S	Msh/st
1459	4137-8012	F. M. McCooey	Berkley O. Bossard	1971	H	1382	S	Msh/st
1460	4138-8013	J. R. Ziegler	Max Hickernell	1971	H	1311	H	Qo/gr
1461	4137-8012	Warren Kelligan	do.	1971	H	1394	H	Mcu/ss
1464	4137-8012	Manos Trailer Court	do.	1971	P	1400	H	Msh/st
1465	4136-8013	Raymond Hassinger	Berkley O. Bossard	1971	H	1308	S	Msh/st
1467	4139-8015	T. E. Johnston	Max Hickernell	1971	H	1290	S	Mcu/ss
1469	4137-8012	Solar Industries	do.	1971	C	1382	S	Msh/st
1470	4136-8012	Lawrence Gamble	do.	1971	H	1358	S	Msh/st
1471	4136-8010	C. J. Dennis	do.	1971	H	1402	S	Msh/st
1473	4138-8013	J. F. L. Hatheway	do.	1971	H	1315	S	Mbe/st
1474	4137-8012	Vernon Twp. Garage	do.	1971	C	1388	S	Mcu/ss
1476	4136-8009	W. C. Smith	do.	1971	H	1272	S	Oco/st
1477	4139-8012	M. N. Hills	do.	1963	H	1093	T	Oco/st
1479	4136-8009	Charles Yeager	do.	1971	N	1120	S	Oco/st
1480	4139-8015	Jack Kordes	do.	1971	H	1282	S	Mcu/ss
1481	4137-8010	Mark Restaurant	do.	1971	C	1138	T	Oco/sh
1482	4138-8010	Eloise Scickora	do.	1971	H	1105	S	Oco/sh
1483	4138-8016	H. S. Williams	Berkley O. Bossard	1971	H	1258	S	Msh/st
1484	4139-8012	Wheeler Auto Supply Inc.	Moody Drilling Co., Inc.	1964	H	1138	S	Oco/st
1487	4139-8012	A. J. Bowley	Max Hickernell	1972	H	1118	S	Oco/sh
1488	4139-8012	E. A. Peelman	Moody Drilling Co., Inc.	1955	H	1150	S	Oco/st
1492	4139-8014	G. W. Kidd	do.	1955	H	1360	S	Mcu/ss
1493	4139-8014	F. C. Post	Max Hickernell	1965	H	1381	S	Msh/st
1494	4136-8008	James Cervone	do.	1971	H	1150	S	Oco/st
1495	4139-8014	R. S. Walton	do.	1965	H	1328	S	Msh/st
1496	4139-8014	Kenneth Coleman	Moody Drilling Co., Inc.	1955	H	1302	S	Mbe/ss
1497	4139-8015	J. Wilkinson, Jr.	do.	1955	H	1247	S	Mbe/st
1500	4138-8007	Ed Fox	Max Hickernell	1971	H	1230	S	Oco/sh
1501	4139-8015	N. Novak, Jr.	do.	1961	H	1290	S	Msh/sh
1502	4136-8007	O. A. Mona	Berkley O. Bossard	1971	H	1400	S	Mm/st
1504	4139-8015	J. E. Wilkinson, Sr.		1963	H	1265	S	Mbe/st
1505	4139-8015	Harold Marhoefer	Moody Drilling Co., Inc.	1947	H	1230	S	Mbd/st
1507	4139-8015	J. T. Hays	do.	1951	H	1262	H	Mbe/st
1508	4139-8015	J. M. Williams	do.	1964	H	1250	S	Mcu/ss
1509	4139-8015	Watson Run United Presby. Ch.	do.	1951	H	1265	S	Mbe/st
1510	4137-8007	Frank Shesky	Max Hickernell	1971	H	1280	S	Mcu/ss
1511	4136-8009	Paul Palka	do.	1971	C	1065	T	Oco/sh
1512	4139-8015	Harold Gibson	Moody Drilling Co., Inc.	1954	H	1302	S	Mbe/st
1513	4140-8008	Howard Schwartz	Max Hickernell	1971	H	1364	S	Mcu/ss
1514	4139-8015	John Crytzer	do.	1972	H	1270	S	Qo/gr
1515	4139-8015	Ronald Coleman	do.	1962	H	1290	S	Qo/gr
1516	4140-8008	Delbert Neely	do.	1971	H	1370	H	Mcu/ss
1517	4139-8015	W. J. Reuter, Jr.	Moody Drilling Co., Inc.	1949	H	1270	S	Oco/st
1518	4139-8016	John Lefko	do.	1952	H	1250	S	Mbe/ss
1519	4139-8016	M. S. Todd	do.	1957	H	1250	W	Mcu/ss
1520	4139-8016	Richard Shelatz	Max Hickernell	1966	H	1272	S	Mbe/st
1521	4139-8016	Edward Mohra	Moody Drilling Co., Inc.	1952	H	1272	H	Mbe/st
1522	4139-8016	George Mohra	do.	1952	H	1268	H	Mbe/st
1524	4139-8016	H. L. Smith	do.	1954	H	1280	S	Qo/gr
1526	4139-8017	Fern Karastury	Max Hickernell	1962	H	1165	S	Oco/sh
1527	4139-8018	Nighthawks Tavern	do.	1966	P	1085	T	Qo/gr
1528	4139-8018	J. W. Fleming	Moody Drilling Co., Inc.	1951	H	1140	S	Oco/st
1529	4139-8018	C. J. Zoner	Max Hickernell	1963	H	1142	S	Oco/sh
1530	4137-8019	Robert Walker	do.	1971	H	1082	T	Qo/gr
1531	4139-8018	E. L. Dixon	Moody Drilling Co., Inc.	1947	H	1143	S	Oco/st
1533	4139-8018	Don Baker	do.	1960	H	1128	S	Oco/st
1534	4139-8018	Gaylen King	Max Hickernell	1963	H	1140	S	Oco/sh

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (pgm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
73	14	6	60	25	7/71	8	.20	---	---	---	Cw-1420
110	110	6	110	25	7/71	20	.36	---	---	---	1421
82	26	8	---	15	1/58	20	---	---	---	---	1422
140	34	8	---	35	7/60	0.3	---	11	1690	8.0	1423
105	65	6	85	10	7/71	7	.14	---	---	---	1424
105	20	6	90	85	3/71	20	---	---	---	---	1425
39	39	6	35	18	8/61	14	.67	---	---	---	1426
87	20	7	24;44;68	26	7/65	12	---	---	---	---	1427
144	139	8	---	2	10/70	150	2.4	---	---	---	1429
82	82	6	78	50	11/71	20	1.3	---	---	---	1431
105	72	6	75	3	8/71	20	.54	---	---	---	1432
56	56	6	56	5	12/71	20	---	---	---	---	1433
44	32	6	33	14	9/72	10	.48	---	---	---	1435
136	40	6	21	10	9/72	5	.06	---	---	---	1436
72	25	6	48;61;69	18	10/71	20	---	---	---	---	1437
96	96	6	91	33	8/71	12	1.7	---	---	---	1447
42	41	8	---	5	9/59	60	4.0	---	---	---	1448
146	125	6	---	40	1/56	4	---	---	---	---	1449
84	20	---	42;68;76	20	7/71	15	---	---	---	---	1451
105	71	6	82	27	12/71	5	---	---	---	---	1452
102	40	6	---	20	10/71	15	.21	---	---	---	1455
125	52	6	70;120	50	6/71	20	.40	---	---	---	1457
67	39	6	40;43	12	5/71	30	1.5	---	---	---	1459
161	161	6	161	45	2/71	20	1.3	---	---	---	1460
195	95	6	145;187	60	10/71	20	---	---	---	---	1461
170	120	8	125;160	45	10/71	50	3.3	---	---	---	1464
81	---	6	24;46;58	45	8/71	12	.63	---	---	---	1465
159	82	6	93;142	60	1971	4	---	---	---	---	1467
86	47	6	51;69	10	2/71	20	---	---	---	---	1469
95	24	6	38;62;88	25	7/71	20	---	---	---	---	1470
120	27	8	60;94	70	7/71	15	1.5	---	---	---	1471
123	70	6	92;117	14	7/71	8	---	---	---	---	1473
198	98	8	110;160;180	45	2/71	20	20	---	---	---	1474
197	193	8	194	90	4/71	20	.33	---	---	---	1476
105	68	6	70;97;103	33	7/63	4	.06	---	---	---	1477
86	26	8	29;43;81	27	4/71	20	---	---	---	---	1479
124	92	6	115	80	12/71	7	.18	---	---	---	1480
165	24	8	71;110;148	31	12/71	8	---	---	---	---	1481
124	46	6	113	24	11/71	3	---	---	---	---	1482
64	49	6	49;53	12	10/71	12	.67	---	---	---	1483
46	20	6	19	4	4/64	10	.38	---	---	---	1484
110	62	6	88;101	10	4/72	15	---	---	---	---	1487
48	32	8	---	20	5/55	10	---	---	---	---	1488
195	58	---	---	130	12/55	4	---	---	---	---	1492
57	23	7	27;48	8	5/65	15	---	---	---	---	1493
83	38	6	42;76	12	5/71	25	.78	---	---	---	1494
82	50	6	56;72;78	3	3/65	5	---	---	---	---	1495
102	50	7	---	35	7/55	15	---	---	---	---	1496
70	16	7	---	14	6/55	10	---	---	---	---	1497
116	78	6	82;102	20	6/71	20	.33	---	---	---	1500
70	20	7	21;55	24	7/61	9	.20	---	---	---	1501
58	35	6	34	7	5/71	---	---	---	---	---	1502
70	18	6	30;52	10	8/63	24	.63	---	---	---	1504
60	39	---	---	---	---	3	---	---	---	---	1505
81	43	7	---	20	10/51	20	---	---	---	---	1507
107	50	6	50	14	3/64	40	.78	---	---	---	1508
80	49	---	---	25	1951	4	---	---	---	---	1509
80	32	6	48;59;77	---	8/71	20	---	---	---	---	1510
72	22	6	---	5	11/71	10	---	---	---	---	1511
112	51	7	---	45	10/54	7	---	---	---	---	1512
141	20	6	85;120	85	8/71	20	1.0	---	---	---	1513
101	101	6	96	44	4/72	20	---	---	---	---	1514
155	155	7	150	50	7/62	15	.68	---	---	---	1515
130	68	6	85;120	70	6/71	15	.50	---	---	---	1516
114	112	5	---	40	7/49	10	.22	8	450	---	1517
83	32	7	---	30	8/52	20	---	---	---	---	1518
133	61	6	---	18	6/57	20	---	---	---	---	1519
87	35	6	78;85	31	6/66	20	---	---	---	---	1520
90	70	7	---	40	9/52	20	---	---	---	---	1521
90	35	7	---	50	12/52	20	1.0	---	---	---	1522
118	118	7	---	34	5/54	6	---	---	---	---	1524
74	54	7	---	40	11/62	4	---	---	---	---	1526
48	48	6	45	6	5/66	12	---	---	---	---	1527
70	47	4	---	28	4/51	7	---	---	---	---	1528
60	52	8	52	36	12/63	7	.29	---	---	---	1529
47	47	6	---	18	9/71	20	---	---	---	---	1530
61	36	---	---	---	---	---	---	---	---	---	1531
57	45	5	---	20	6/50	5	---	---	---	---	1533
47	27	6	31;42	10	11/63	20	2.0	---	---	---	1534

TABLE 6

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer litholo
Number	Lat-Long							
Cw-1535	4137-8022	Joseph Palla	Max Hickernell	1971	H	1120	S	Mcu/ss
1536	4133-8029	Allen Janis	do.	1971	H	1021	S	Mcu/ss
1537	4133-8027	Roy Gurrigan	do.	1971	H	1223	H	Msh/st
1538	4139-8016	Harry Hardern	Berkley D. Bossard	1971	H	1294	H	Mcu/ss
1539	4149-8010	Craig Harney	Max Hickernell	1971	H	1430	S	Mcu/ss
1541	4137-8017	William Kesler	do.	1971	H	1152	S	Mcu/ss
1542	4139-8019	Manuel Roberts	Moody Drilling Co., Inc.	1949	H	1100	T	Qo/gr
1543	4139-8019	Henry Schofield	Max Hickernell	1962	H	1122	S	Dco/sh
1547	4139-8019	Charles Hawthorne	do.	1972	H	1103	T	Qo/gr
1548	4139-8019	G. H. Karastury	do.	1965	H	1124	S	Qo/gr
1549	4139-8019	Richard Stanish	do.	1963	---	1105	T	Qo/sdgv
1550	4142-8027	H. G. Brown	do.	1972	H	1152	S	Mcu/ss
1551	4138-8013	H. V. Williams	do.	1972	H	1328	S	Msh/st
1552	4139-8019	M. C. Gibson	Moody Drilling Co., Inc.	1948	H	1134	S	Dco/sh
1553	4139-8019	S. J. Wojsiat	Max Hickernell	1967	H	1148	S	Dco/sh
1555	4134-8024	James Wygant	do.	1972	H	1150	S	Mbe/ss
1556	4139-8017	Harmonsburg Building Supply	do.	1972	H	1170	S	Mcu/ss
1557	4137-8018	S. J. Wojsiat	do.	1972	H	1132	S	Dco/sh
1564	4139-8021	Donald Eaton	do.	1961	H	1190	S	Mcu/ss
1565	4137-8008	K. Wilson, Jr.	do.	1972	H	1348	S	Mcu/ss
1566	4139-8021	R. W. Yingling	Moody Drilling Co., Inc.	1951	H	1158	S	Mcu/ss
1567	4139-8021	Clare Schambach	Max Hickernell	1965	H	1110	S	Qo/gr
1568	4139-8023	R. E. Evans	Moody Drilling Co., Inc.	---	H	1060	S	Dco/st
1569	4139-8023	R. L. Kerns	Max Hickernell	1964	H	1170	S	Mcu/ss
1570	4139-8023	Winton Irons	Moody Drilling Co., Inc.	1946	H	1125	S	Mcu/ss
1571	4139-8023	James Moyer	do.	1954	H	1248	S	Qo/gr
1572	4139-8023	B. C. Alter	do.	1952	H	1258	S	Mcu/ss
1573	4139-8024	O. C. Lance	do.	1947	H	1060	S	Dco/st
1574	4139-8024	G. L. Noey	do.	1952	H	1062	S	Dco/sh
1575	4139-8024	Donald Lewis	Max Hickernell	1965	H	1072	S	Dco/sh
1576	4139-8024	E. A. Jackson	Lininger Drilling & Pumps	1970	H	1053	H	Qo/sdgv
1577	4139-8024	M. L. Smith	Moody Drilling Co., Inc.	1949	H	1075	S	Dco/st
1578	4139-8025	Gordon Irons	do.	1954	---	1070	S	Dco/st
1579	4139-8025	Gilbert Irons	do.	1948	S	1035	T	Dco/st
1580	4140-8028	Al Stesiak	Berkley D. Bossard	1968	H	1016	S	Dco/sh
1581	4140-8024	Stanley Suk	Max Hickernell	1969	H	1152	S	Mcu/ss
1582	4150-8025	Parley Burns	B. W. Bateman & Son	1968	H	875	T	Qo/gr
1583	4141-8030	Louis Stefan	Harland H. Knapp	1970	P	1027	S	Dco/sh
1584	4139-8025	Linesville Bor.	Moody Drilling Co., Inc.	1946	P	1030	S	Dco/st
1585	4140-8025	David Steinmiller	Harland H. Knapp	1970	H	1073	S	Dco/st
1586	4142-8025	George Headly	Max Hickernell	1970	H	1138	S	Dco/sh
1587	4142-8030	Norman Taft	Perl A. Litwiler	1970	H	1140	S	Dco/sh
1588	4142-8030	F. H. Stewart	do.	1970	H	1120	S	Dco/sh
1589	4140-8024	F. R. Carroll	do.	1970	H	1162	S	Mcu/ss
1590	4143-8023	R. C. Wytcherley	Berkley D. Bossard	1970	H	1160	S	Qo/gr
1591	4139-8025	Alpine McLane	Moody Drilling Co., Inc.	1961	C	1055	S	Dco/sh
1592	4140-8028	Rudy Canonslo	Max Hickernell	1968	H	1028	S	Dco/sh
1593	4142-8029	Irene Stetson	do.	1968	H	1094	S	Dco/st
1594	4139-8025	Linesville Bor.	Moody Drilling Co., Inc.	1946	P	1108	S	Mcu/ss
1595	4144-8029	Carl Koenig	Max Hickernell	1967	H	1133	S	Dco/st
1596	4140-8027	Ronald Niemann	do.	1966	H	1108	S	Dco/sh
1597	4141-8017	Luther Watt	do.	1966	H	1268	S	Qo/gr
1598	4139-8025	C. G. Tate	do.	1965	H	1062	S	Qo/gr
1599	4139-8024	Richard Dehart	Lininger Drilling & Pumps	1960	H	1090	S	Qo/gr
1600	4139-8026	Howard Irons	Moody Drilling Co., Inc.	1956	S	1100	S	Dco/st
1603	4139-8026	J. W. Penfield	Lininger Drilling & Pumps	1965	H	1130	S	Mcu/ss
1604	4135-8018	W. R. Winters	Max Hickernell	1967	H	1095	S	Mcu/ss
1605	4139-8027	Walter Sinko	do.	1965	H	1018	S	Dco/st
1606	4148-8015	Sam Stoudt	do.	1970	H	1302	H	Dco/st
1607	4148-8015	D. P. Martin	do.	1969	H	1300	H	Dco/sh
1608	4149-8016	John Gresh	do.	1970	H	1215	S	Dco/sh
1609	4149-8014	Ralph Schirmer	do.	1970	H	1128	T	Qo/gr
1610	4150-8014	George Armel	Boyd Lee Hall	1968	H	1140	T	Qo/gr
1611	4145-8011	Max Schlosser	Max Hickernell	1969	H	1308	S	Dco/st
1612	4145-8012	E. C. Baer	do.	1968	H	1245	S	Dco/sh
1613	4146-8012	Lawrence Baer	do.	1968	H	1280	S	Dco/sh
1614	4145-8014	Mrs. Charles Kelyman	do.	1967	H	1117	S	Dco/sh
1615	4146-8012	G. A. Coon	do.	1966	H	1323	S	Dco/st
1616	4147-8010	Edward Martin	do.	1966	H	1460	S	Mcu/ss
1617	4146-8012	Jim Evans	Boyd Lee Hall	1969	H	1237	C	Dco/sh
1618	4146-8012	Harold Baer	Max Hickernell	1968	H	1255	S	Qo/gr
1619	4146-8012	K. L. Mook	do.	1968	H	1220	S	Dco/st
1620	4149-8013	Steve Shkuratoff	Boyd Lee Hall	1968	H	1158	S	Dco/sh
1621	4139-8027	Andy Schmidt	Lininger Drilling & Pumps	1962	H	1018	S	Dco/sh
1622	4139-8027	G. Manus	do.	1960	H	1035	S	Dco/sh
1623	4139-8027	W. J. Oldendorf	R. E. Mohr Well Drilling	1970	H	1035	S	Dco/sh

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
95	33	6	70	40	7/71	15	.50	---	---	---	Cw-1535
64	35	6	40;58	6	7/71	30	5.0	---	---	---	1536
72	30	6	34:60	25	7/71	15	1.5	---	---	---	1537
150	31	6	18;29;146	112	5/71	20	2.0	---	---	---	1538
53	24	6	32;47	10	2/71	20	1.3	9	320	---	1539
70	32	6	45;60	---	3/71	20	---	---	---	---	1541
55	55	5	---	12	8/49	50	---	---	---	---	1542
53	39	7	43	16	2/62	20	---	---	---	---	1543
45	45	6	40	11	5/72	12	---	---	---	---	1547
41	41	6	38	11	9/65	20	---	---	---	---	1548
20	20	8	11;20	8	7/63	15	15	---	---	---	1549
60	40	6	20	14	1/72	20	---	---	---	---	1550
88	48	6	69;76	14	2/72	20	---	---	---	---	1551
75	32	6	---	25	10/48	2	.04	---	---	---	1552
48	21	6	---	12	2/67	20	---	---	---	---	1553
135	42	8	94;126	80	1/72	15	---	---	---	---	1555
73	26	6	32;65	23	1/72	15	---	---	---	---	1556
108	92	6	100	70	1/72	12	.60	---	---	---	1557
105	34	6	35;75	65	8/61	30	3.0	---	---	---	1564
133	79	6	95;130	85	1/72	10	---	---	---	---	1565
70	53	5	---	12	4/51	40	2.2	---	---	---	1566
47	47	6	44	---	5/65	20	---	---	---	---	1567
80	35	7	---	20	8/54	14	---	---	---	---	1568
95	22	6	59	60	5/64	11	.73	---	---	---	1569
80	53	4	---	30	12/46	10	.50	---	---	---	1570
95	95	7	---	---	---	20	---	---	---	---	1571
170	21	7	---	115	4/52	10	---	---	---	---	1572
57	25	---	---	4	1947	15	---	---	---	---	1573
80	51	7	---	---	11/52	10	---	---	---	---	1574
80	66	7	73	5	2/65	20	---	---	---	---	1575
57	57	7	---	25	4/70	15	.45	---	---	---	1576
80	65	5	---	8	3/49	10	.31	---	---	---	1577
75	48	7	---	21	3/54	6	---	---	---	---	1578
23	23	8	---	2	10/48	10	.80	---	---	---	1579
75	62	6	37;53	5	4/68	4	.06	---	---	---	1580
91	21	6	27;60;83	40	12/69	20	1.0	---	---	---	1581
38	36	6	20;38	10	10/68	10	1.0	---	---	---	1582
103	71	7	80;92	22	4/70	10	.16	11	500	---	1583
84	32	---	---	F	7/46	10	---	---	---	---	1584
64	48	7	60	20	4/70	7	.20	---	---	---	1585
44	36	6	38	2	11/70	15	---	---	---	---	1586
80	27	6	27	12	4/70	6	.10	---	---	---	1587
48	33	6	37	6	5/70	12	.35	---	---	---	1588
80	32	6	67	40	6/70	20	2.0	---	---	---	1589
26	26	6	22	6	9/70	2	.03	---	---	---	1590
110	31	12	---	---	4/61	20	---	---	---	---	1591
49	35	6	38;42	6	5/68	20	---	---	---	---	1592
78	18	6	21;62	10	6/68	10	---	---	---	---	1593
62	33	---	---	23	9/46	40	20	---	---	---	1594
49	29	6	26;43	8	2/67	20	---	---	---	---	1595
85	40	7	51;74	12	10/66	---	---	---	---	---	1596
85	84	6	85	11	11/66	10	---	---	---	---	1597
35	35	6	31	25	2/65	10	---	---	---	---	1598
65	65	7	---	6	6/60	1	.04	---	---	---	1599
129	34	8	---	18	3/56	9	---	---	---	---	1600
65	38	7	---	8	11/65	7	.33	---	---	---	1603
145	32	6	---	11	5/67	6	---	---	---	---	1604
72	53	6	---	20	9/65	1	---	---	---	---	1605
58	27	8	27;53	12	4/70	5	---	12	600	---	1606
48	16	7	16	12	9/69	2	---	---	---	---	1607
60	39	8	31	10	4/70	15	---	8	500	---	1608
72	70	6	67	14	10/70	6	---	---	---	---	1609
40	40	8	40	30	10/68	20	2.0	---	---	---	1610
93	24	8	25;60;87	10	3/69	20	---	---	---	---	1611
110	18	8	22;98	30	3/68	15	---	---	---	---	1612
94	78	6	81;92	55	5/68	5	---	---	---	---	1613
85	38	6	60;73;81	8	4/67	5	---	---	---	---	1614
105	22	8	43;52;77	27	10/66	5	---	---	---	---	1615
98	19	6	62;96	33	10/66	3	---	---	---	---	1616
72	52	6	32	4	3/69	---	---	---	---	---	1617
47	47	6	47	18	8/68	10	---	---	---	---	1618
95	34	6	40;70	16	7/68	4	---	---	---	---	1619
90	22	10	22;85	22	9/68	20	.53	6	400	---	1620
77	70	7	---	5	7/62	3	.12	---	---	---	1621
58	58	7	---	8	10/60	3	.06	---	---	---	1622
82	63	7	---	18	7/70	2	.09	---	---	---	1623

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-1624	4140-8007	B. L. Peterson	Max Hickernell	1961	H	1420	S	Msh/st
1625	4140-8007	Dr. H. Cunningham	Moody Drilling Co., Inc.	1951	H	1398	S	Msh/st
1627	4140-8008	C. E. Sittig	Max Hickernell	1960	H	1430	S	Msh/st
1628	4140-8008	R. H. Bode	do.	1960	H	1400	S	Msh/st
1629	4140-8008	J. A. Kightlinger	Moody Drilling Co., Inc.	1956	H	1390	S	Msh/st
1630	4140-8008	G. W. Munson, Jr.	Max Hickernell	1963	H	1365	S	Mcu/ss
1631	4140-8008	J. F. Hogue	Moody Drilling Co., Inc.	1946	H	1320	S	Mcu/ss
1632	4140-8009	Acto Tool Co.	Max Hickernell	1963	---	1198	S	Dco/st
1633	4140-8009	M. O. Preston	Moody Drilling Co., Inc.	1964	H	1295	S	Dco/sh
1634	4140-8009	A. T. Lowther	do.	1965	H	1262	S	Dco/sh
1635	4140-8009	David Cropp	do.	1963	H	1128	S	Dco/sh
1636	4140-8010	Stan's Greenhouses	do.	1957	S	1085	T	Qo/sdgv
1639	4140-8010	Benjamin Grant	do.	1955	H	1155	S	Dco/st
1641	4140-8010	W. M. Higley	do.	1955	H	1198	S	Dco/st
1642	4140-8010	Earl Drayer, Sr.	Max Hickernell	---	H	1175	S	Dco/sh
1643	4140-8011	J. R. Martin	Moody Drilling Co., Inc.	1954	H	1380	S	Msh/st
1644	4130-8020	H. F. Dagen	Berkley O. Bossard	1970	H	1175	S	Mcu/ss
1645	4134-8016	C. M. Booth	Harland H. Knapp	1969	H	1122	S	Qo/sdgv
1646	4132-8021	T. N. Hyde	Max Hickernell	1968	H	1052	H	Qo/gr
1647	4140-8011	R. A. Doubet	Moody Drilling Co., Inc.	1957	H	1410	S	Msh/st
1648	4132-8021	Wayne See	Max Hickernell	1967	H	1040	S	Qo/gr
1649	4132-8015	R. L. Erickson	do.	1967	H	1272	S	Qo/gr
1651	4133-8014	Mrs. A. H. Adsit	do.	1967	H	1182	S	Msh/st
1652	4133-8020	Neil Unger	do.	1968	H	1223	S	Msh/st
1653	4136-8026	R. L. Henry	Berkley O. Bossard	1968	H	1030	S	Dco/sh
1654	4131-8017	Walter Anthony	do.	1968	H	1355	S	Po/ss
1655	4131-8022	Barton Hoagland	do.	1968	H	1055	S	Mbe/st
1656	4133-8020	Harry Watt	do.	1968	H	1215	S	Msh/st
1658	4140-8011	Harold Dudenhoeffer	Moody Drilling Co., Inc.	1956	H	1283	S	Mcu/ss
1659	4140-8011	W. J. Wybiral	do.	1947	H	1276	S	Mcu/ss
1660	4140-8011	Walter Phillips	do.	1960	H	1238	S	Dco/sh
1662	4140-8012	H. L. Findley	do.	1955	H	1090	T	Qo/sdgv
1663	4140-8012	Theodore Hall	Max Hickernell	1966	H	1272	S	Mcu/ss
1664	4140-8013	J. A. Taylor	do.	1964	H	1170	S	Dco/st
1665	4140-8013	R. L. Smock	Moody Drilling Co., Inc.	1958	H	1170	S	Qo/sdgv
1669	4140-8013	Ralph Bradshaw	do.	1955	H	1278	S	Mbe/ss
1670	4140-8016	V. O. Wescott	do.	1955	H	1322	S	Mbe/st
1671	4140-8016	G. M. Mead	Max Hickernell	1970	H	1335	S	Qo/gr
1672	4140-8017	O. E. Douglas	Berkley O. Bossard	1969	H	1278	H	Mbe/st
1673	4140-8018	Wesley Reitze	Moody Drilling Co., Inc.	1957	H	1182	S	Dco/sh
1674	4140-8020	Paul Irwin	do.	1949	H	1180	H	Qo/s
1675	4140-8020	William Miller	Berkley O. Bossard	1968	H	1118	S	Qo/sdgv
1676	4140-8021	Walter Walsh	Moody Drilling Co., Inc.	1953	H	1210	S	Mcu/ss
1677	4140-8022	A. O. Henderson	Max Hickernell	1964	H	1220	S	Qo/sdgv
1678	4140-8022	E. R. Zolnai	do.	1964	H	1190	S	Mcu/ss
1679	4140-8022	do.	do.	1972	P	1200	S	Mcu/ss
1680	4140-8022	S. A. Hughes	Moody Drilling Co., Inc.	1950	H	1174	S	Qo/---
1681	4140-8022	H. Blumenstein, Jr.	do.	1953	H	1180	W	Mcu/ss
1682	4140-8022	Yea-Ko Camp	do.	1950	H	1245	S	Mbe/st
1683	4140-8022	Harold Lasey	Max Hickernell	1972	H	1250	S	Mcu/ss
1684	4140-8025	Raymond Oygert	Moody Drilling Co., Inc.	1963	S	1170	S	Mcu/ss
1685	4140-8025	do.	do.	1962	H	1170	S	Mcu/ss
1686	4140-8025	do.	Berkley O. Bossard	1973	H	1162	S	Mcu/ss
1687	4140-8026	E. M. Shields	Moody Drilling Co., Inc.	1952	H	1130	S	Mcu/ss
1688	4140-8026	Linesville Food Products, Inc.	do.	1962	H	1202	H	Mcu/ss
1689	4140-8027	E. L. Bullis	do.	1952	H	1120	S	Mcu/ss
1690	4140-8027	Raymond Tomczak	do.	1957	H	1058	H	Dco/sh
1692	4140-8027	R. L. Oats	do.	1952	H	1132	S	Mcu/ss
1693	4140-8027	R. S. Peck	do.	1955	---	1142	S	Mcu/ss
1694	4140-8027	Roland Gee	do.	1950	H	1140	S	Mcu/ss
1695	4140-8028	George Nelson	do.	1955	H	1038	S	Dco/sh
1696	4140-8028	James Bryan	Lininger Drilling & Pumps	1971	H	1030	S	Dco/sh
1697	4131-8008	W. E. Vogan	Max Hickernell	1970	H	1165	S	Msh/st
1699	4140-8028	Marion Reed	Moody Drilling Co., Inc.	1963	H	1042	S	Dco/sh
1700	4140-8028	James Lauffer	Lininger Drilling & Pumps	1972	H	1054	S	Dco/sh
1703	4140-8028	J. A. Roncaglione	Berkley O. Bossard	1967	H	1035	S	Qt/c
1704	4141-8007	Bethesda Home for Children	Moody Drilling Co., Inc.	1952	C	1247	H	Mcu/ss
1705	4141-8007	Country Club	do.	1971	I	1315	H	Dco/ss
1706	4141-8007	L. R. Wright	do.	1952	H	1218	H	Dco/st
1707	4141-8008	Bethesda Home for Children	do.	1962	P	1345	H	Mcu/ss
1708	4141-8008	Alton Rabell	do.	1956	H	1280	S	Dco/sh
1709	4141-8008	G. O. Wilson	Max Hickernell	1964	H	1288	S	Dco/st
1713	4141-8009	Investment Casting Corp.	do.	1963	N	1130	S	Dco/sh
1714	4141-8009	E. J. Derricott	Moody Drilling Co., Inc.	1954	H	1112	T	Dco/sh
1716	4141-8009	R. J. Hodges	do.	1952	H	1105	S	Dco/st
1717	4141-8009	J. L. Field	do.	1963	S	1162	S	Dco/sh

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
80	42	7	40;75	10	5/61	20	2.0	---	---	---	Cw-1624
51	48	7	---	16	10/51	20	---	---	---	---	1625
80	21	7	22;50	9	9/60	20	.56	---	---	---	1627
50	18	7	21	9	9/60	5	.12	---	---	---	1628
55	15	8	---	5	2/56	6	---	---	---	---	1629
83	20	6	68	10	3/63	15	---	---	---	---	1630
70	40	4	---	---	1946	5	---	---	---	---	1631
102	22	8	33;61;76;97	38	8/63	15	---	---	---	---	1632
91	32	6	70	39	8/64	8	.15	---	---	---	1633
62	16	6	13	17	1/65	5	.11	---	---	---	1634
92	38	8	50	30	11/63	10	.18	---	---	---	1635
98	98	6	---	8	5/57	30	---	---	---	---	1636
82	18	8	---	20	9/55	9	---	---	---	---	1639
103	36	8	---	50	6/55	5	---	---	---	---	1641
125	28	6	35;111	27	---	3	.03	---	---	---	1642
92	42	7	---	45	9/54	10	---	---	---	---	1643
272	119	6	35;244	165	9/70	12	.14	---	---	---	1644
70	70	6	40;67	20	9/69	6	.15	---	---	---	1645
48	48	6	42	30	7/68	10	---	---	---	---	1646
104	25	6	---	18	10/57	6	---	---	---	---	1647
95	95	7	91	22	9/67	15	---	---	---	---	1648
126	126	6	122	35	2/67	12	---	---	---	---	1649
72	47	6	55;68	48	1/67	30	---	---	---	---	1651
65	18	6	22;62	18	12/68	8	---	---	---	---	1652
69	24	8	18;59	14	7/68	2	.03	---	---	---	1653
65	19	6	28	19	8/68	30	1.2	---	---	---	1654
69	50	6	40;62	24	5/68	30	5.0	---	---	---	1655
85	40	6	35	23	5/68	0.5	.01	---	---	---	1656
65	26	7	---	35	6/56	15	---	---	---	---	1658
46	22	5	---	30	7/47	10	.62	---	---	---	1659
64	62	6	---	14	4/60	20	---	---	---	---	1660
52	49	7	---	18	4/55	6	---	---	---	---	1662
74	39	7	21;81	48	5/66	15	---	---	---	---	1663
90	64	6	70;83;87	10	5/64	20	1.3	---	---	---	1664
68	68	---	---	28	7/58	10	---	---	---	---	1665
55	16	5	---	30	7/55	10	---	---	---	---	1669
120	76	6	---	50	12/55	20	---	---	---	---	1670
76	73	6	---	20	5/70	7	---	---	---	---	1671
79	66	6	64	17	11/69	30	.79	---	---	---	1672
75	43	7	---	18	10/57	20	---	---	---	---	1673
164	160	7	---	---	---	---	---	---	---	---	1674
196	190	6	172	55	9/68	6	.30	---	---	---	1675
110	41	6	---	85	10/53	15	---	---	---	---	1676
81	81	6	81	65	12/64	10	---	---	---	---	1677
60	28	6	32;54	8	10/64	10	---	12	450	---	1678
75	21	8	---	---	---	25	---	8	300	---	1679
51	51	5	---	15	4/50	10	---	---	---	---	1680
70	65	7	---	27	12/53	20	---	---	---	---	1681
50	30	5	---	18	4/50	10	---	---	---	---	1682
142	100	6	12;98	80	3/72	25	3.1	---	---	---	1683
104	21	8	---	76	8/63	30	---	---	---	---	1684
105	30	8	---	75	2/62	40	---	---	---	---	1685
106	34	6	34;65	65	3/73	40	2.7	---	---	---	1686
68	54	7	---	10	3/52	15	---	---	---	---	1687
136	34	6	---	100	10/62	20	---	---	---	---	1688
56	48	6	---	18	7/52	60	---	---	---	---	1689
100	56	6	---	28	8/57	10	---	---	---	---	1690
60	32	---	---	22	1952	10	---	---	---	---	1692
102	21	8	---	---	---	25	---	---	---	---	1693
60	21	7	---	28	6/50	28	---	---	---	---	1694
113	68	7	---	30	5/55	0.7	---	---	---	---	1695
90	72	7	---	20	9/71	4	.06	---	---	---	1696
91	32	6	78	50	6/70	20	---	---	---	---	1697
102	73	8	72	21	8/63	2	---	---	---	---	1699
75	56	7	---	20	6/72	15	.38	---	---	---	1700
30	21	6	23	10	10/67	8	.80	---	---	---	1703
194	19	8	23;49;56;110	21	8/52	50	1.3	---	---	---	1704
695	24	8	---	---	---	---	---	---	---	---	1705
85	26	7	---	23	7/52	5	---	---	---	---	1706
290	22	8	---	70	8/62	25	---	---	---	---	1707
105	55	7	---	40	10/56	10	---	---	---	---	1708
110	63	6	81;94;106	48	10/64	8	---	---	---	---	1709
103	31	6	42;80;96	40	8/63	10	.16	---	---	---	1713
110	71	7	---	37	11/54	2	---	---	---	---	1714
67	16	7	---	25	8/52	5	---	---	---	---	1716
94	39	8	45	35	9/63	7	.12	---	---	---	1717

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-1719	4141-8009	Joseph Farkus	Max Hickernell	1963	H	1195	S	Dco/sh
1720	4141-8010	Chester Weier	Berkley D. Bossard	1972	H	1317	S	Mcu/ss
1721	4141-8011	George Zinchiak	Moody Drilling Co., Inc.	1954	H	1245	H	Dco/st
1722	4141-8011	Paul Brown	Max Hickernell	1963	H	1372	S	Msh/st
1723	4141-8013	Kenneth Hill	Moody Drilling Co., Inc.	1955	H	1160	S	Dco/st
1724	4141-8013	F. W. Lybarger	do.	1951	H	1160	S	Dco/st
1725	4141-8014	R. A. Kawinski	do.	1954	H	1478	H	Mm/sh
1726	4141-8015	Walter Ziegler	Max Hickernell	1963	H	1425	S	Msh/st
1727	4141-8015	D. L. Emig	do.	1961	H	1457	H	Msh/st
1728	4141-8020	R. E. Battles	Moody Drilling Co., Inc.	1950	H	1048	T	Qo/gr
1729	4141-8020	S. A. Culbertson	do.	1954	H	1110	S	Qo/gr
1730	4141-8021	R. P. Gammon	Max Hickernell	1972	H	1260	S	Mcu/ss
1731	4141-8021	J. A. Hruska	Moody Drilling Co., Inc.	1963	H	1132	S	Mcu/ss
1732	4141-8021	do.	do.	---	H	1174	S	Mcu/ss
1733	4141-8022	Claude Smith	do.	1949	H	1252	S	Mcu/ss
1734	4141-8022	Ira Sherretts	Berkley D. Bossard	1972	H	1212	S	Mcu/---
1735	4141-8023	Harold Gillette	Moody Drilling Co., Inc.	1957	H	1255	H	Mbe/st
1736	4141-8023	Orrie Long	do.	1958	H	1179	S	Mcu/ss
1737	4141-8024	Rudy Baker	Max Hickernell	1972	H	1180	S	Mcu/ss
1738	4141-8024	R. A. Lampman	Moody Drilling Co., Inc.	1957	H	1192	H	Mcu/ss
1739	4141-8024	Gerald Prather	do.	1954	H	1190	S	Mcu/ss
1740	4141-8024	William Hoogstad	do.	1954	H	1185	S	Mcu/ss
1741	4141-8025	Emil Brug	Lininger Drilling & Pumps	1961	H	1102	S	Dco/sh
1742	4141-8025	C. W. Lisk	Berkley D. Bossard	1968	H	1142	S	Mcu/ss
1743	4141-8025	O. R. Simmerman	do.	1973	H	1140	S	Mcu/ss
1744	4141-8026	R. E. Wheeler	Moody Drilling Co., Inc.	1954	H	1162	S	Mcu/ss
1745	4141-8026	Merwin Wheeler	Max Hickernell	1962	H	1160	S	Mcu/ss
1746	4141-8028	Crystal Springs Campground	do.	1972	---	1040	S	Dco/st
1747	4141-8029	John Rayouk	Lininger Drilling & Pumps	1971	H	1022	T	Qo/sdgv
1748	4141-8030	Whispering Trails Camping	Moody Drilling Co., Inc.	1949	H	1038	T	Dco/st
1749	4142-8007	A. A. Charlton	do.	1963	H	1145	S	Dco/st
1751	4142-8008	Fred Smith	Max Hickernell	1963	H	1135	S	Dco/st
1752	4142-8008	Chalmer Jordan	Moody Drilling Co., Inc.	1963	H	1132	S	Dco/sh
1754	4142-8009	H. R. Johnston	Max Hickernell	1965	H	1188	S	Dco/sh
1755	4142-8011	Albert Stright	Moody Drilling Co., Inc.	1952	H	1338	S	Mo/sh
1756	4142-8012	Arden Dearborn	Max Hickernell	---	H	1230	S	Dco/sh
1757	4142-8012	T. E. Fitch	Moody Drilling Co., Inc.	1960	H	1210	S	Dco/sh
1758	4142-8012	Merle Hayes	do.	1954	H	1115	S	Dco/st
1759	4142-8012	Frank VanZandt	do.	1955	H	1200	S	Dco/sh
1760	4142-8012	A. J. Price	do.	1953	H	1190	S	Dco/st
1761	4142-8012	R. L. Rogers	do.	1965	H	1130	S	Dco/sh
1762	4142-8012	Michael Constantinovich	do.	---	H	1200	S	Dco/st
1764	4142-8012	V. L. Calhoon	do.	1960	H	1244	S	Dco/sh
1765	4142-8013	Marcello Zinnamosca	do.	1965	H	1170	S	Dco/sh
1766	4142-8013	Keith Markam	Max Hickernell	1965	H	1170	S	Dco/sh
1769	4142-8013	Dick Cotton	do.	1963	H	1145	S	Dco/st
1770	4142-8013	Dale Satterlee	Moody Drilling Co., Inc.	1964	H	1098	T	Qo/gr
1771	4142-8014	A. C. Davis	Max Hickernell	1965	H	1408	H	Msh/st
1772	4142-8014	Fred Thomas	do.	1963	H	1293	S	Mbe/st
1774	4142-8015	Frank Dillinger	do.	1962	H	1408	S	Msh/st
1775	4142-8015	D. L. George	Moody Drilling Co., Inc.	1961	H	1394	S	Msh/st
1776	4142-8015	J. R. Arendash	do.	1954	H	1398	S	Msh/st
1777	4142-8016	W. H. Fornof	Max Hickernell	1963	I	1412	H	Msh/st
1778	4142-8016	do.	do.	1960	I	1410	H	Msh/st
1779	4142-8016	H. R. Gillespie	do.	1964	H	1372	S	Mcu/ss
1780	4142-8016	L. E. Running	do.	1960	H	1350	W	Mcu/st
1781	4142-8017	W. M. Landers	do.	1965	H	1365	H	Msh/st
1782	4142-8017	Cyrus Brooks	do.	1961	H	1312	S	Mcu/ss
1784	4142-8018	O. A. Jones	do.	1972	H	1362	H	Msh/st
1785	4142-8019	D. A. Bailey	do.	1972	H	1220	S	Mcu/ss
1786	4142-8019	E. W. Hall	Moody Drilling Co., Inc.	1947	H	1200	S	Mcu/ss
1787	4142-8019	do.	do.	1951	H	1200	S	Mcu/ss
1788	4142-8019	Emery Kordosh	do.	1959	H	1190	S	Dco/sh
1789	4142-8020	Stephen Luchansky	do.	1951	H	1142	S	Dco/st
1791	4142-8020	Russell Loper	do.	1956	H	1065	S	Dco/st
1792	4142-8021	Budd Richmond	do.	1952	H	1138	S	Dco/st
1793	4142-8021	Thomas Painter	do.	1955	H	1162	S	Dco/st
1794	4142-8021	G. C. Doubet	do.	1956	H	1042	S	Qo/gr
1795	4142-8022	J. E. Hilla	do.	1959	H	1200	S	Mcu/ss
1796	4142-8022	R. L. Gregory	Max Hickernell	1961	H	1170	S	Mcu/ss
1797	4142-8022	R. F. Shelby	Moody Drilling Co., Inc.	1957	H	1185	S	Mcu/ss
1798	4142-8024	D. R. Lindsey	do.	1952	H	1184	S	Mcu/ss
1799	4142-8024	Dewayne Headley	do.	1951	H	1172	S	Mcu/ss
1800	4142-8024	George Headley	do.	1950	S	1170	S	Mcu/ss
1801	4142-8024	Walter Withers	Berkley D. Bossard	1969	H	1188	H	Mcu/ss
1802	4142-8025	Blazon Inc.	Lininger Drilling & Pumps	1960	U	1128	S	Qo/sdgv
1803	4142-8025	Dale Thompson	Moody Drilling Co., Inc.	1951	H	1172	H	Mcu/ss

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hardness (gpg)	Specific conductance (micromhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
72	33	6	45;58	15	5/63	10	.18	---	---	---	Cw-1719
70	49	6	43	36	11/72	18	1.3	8	450	---	1720
68	27	7	---	7	6/54	60	---	---	---	---	1721
92	20	6	35;72;87	40	11/63	6	.12	---	---	---	1722
115	32	8	---	18	5/55	1	---	---	---	---	1723
87	30	7	---	30	5/51	5	---	---	---	---	1724
54	30	7	---	24	10/54	20	---	---	---	---	1725
126	125	6	124	45	8/63	8	.10	---	---	---	1726
80	47	7	---	35	10/61	15	.65	---	---	---	1727
53	53	6	---	15	9/50	10	---	---	---	---	1728
91	91	7	---	50	11/54	6	---	---	---	---	1729
148	21	6	110;140	39	9/72	15	---	---	---	---	1730
101	32	6	---	56	5/63	10	---	---	---	---	1731
80	45	6	---	36	---	15	---	---	---	---	1732
127	31	5	---	80	3/49	6	.60	---	---	---	1733
88	78	6	30;70	57	9/72	50	6.2	---	---	---	1734
100	35	6	---	30	10/57	15	---	---	---	---	1735
80	57	6	---	13	11/58	20	---	---	---	---	1736
85	24	6	40;60;70	40	8/72	15	---	---	---	---	1737
85	50	8	---	35	8/57	20	---	---	---	---	1738
64	64	7	---	35	4/54	30	---	---	---	---	1739
60	30	7	---	30	7/54	30	---	---	---	---	1740
50	38	7	---	6	10/61	6	.25	---	---	---	1741
66	48	6	44;47	33	7/68	24	1.4	---	---	---	1742
70	41	6	40	26	5/73	60	2.7	---	---	---	1743
70	18	7	---	30	10/54	10	---	---	---	---	1744
130	18	8	30;50;73;115	25	4/62	25	---	---	---	---	1745
72	28	8	24;61	---	---	12	---	---	---	---	1746
32	28	7	---	10	6/71	20	2.0	---	---	---	1747
145	66	5	---	31	9/49	1	---	---	---	---	1748
50	---	6	---	15	1963	8	---	---	---	---	1749
125	31	6	40;110;118	38	8/63	3	---	---	---	---	1751
93	35	8	34	16	11/63	40	1.0	---	---	---	1752
73	31	7	50;64	18	12/65	10	---	---	---	---	1754
70	29	7	---	25	7/52	0.5	---	---	---	---	1755
58	19	6	34;52	12	7/63	6	.01	---	---	---	1756
54	40	6	---	12	7/60	8	---	---	---	---	1757
54	42	7	---	6	---	6	---	---	---	---	1758
95	12	8	---	30	9/55	10	---	---	---	---	1759
82	20	7	---	24	12/53	7	---	---	---	---	1760
75	42	8	25;50	21	5/65	30	.77	---	---	---	1761
70	26	7	---	30	11/53	12	---	---	---	---	1762
100	32	8	---	40	9/60	10	---	---	---	---	1764
106	29	---	52	23	9/65	5	.06	---	---	---	1765
150	19	8	85;131	34	5/65	2	---	---	---	---	1766
64	41	6	53;62	20	---	7	.16	---	---	---	1769
362	272	6	---	F	11/64	12	---	---	---	---	1770
44	23	6	---	16	5/65	5	---	---	---	---	1771
54	29	6	31;51	22	6/63	15	.83	---	---	---	1772
60	20	7	30;51	10	3/62	12	---	---	---	---	1774
88	23	6	---	8	1/61	20	---	---	---	---	1775
84	30	8	---	12	4/54	5	---	---	---	---	1776
45	38	12	28	17	10/63	120	20	---	---	---	1777
40	31	8	24	12	8/60	60	30	---	---	---	1778
155	39	6	37;147;153	100	---	10	.28	---	---	---	1779
117	22	7	23;109	8	7/60	20	.28	---	---	---	1780
25	13	8	19;23	4	4/65	5	---	---	---	---	1781
104	85	7	60;70	21	9/61	10	.12	---	---	---	1782
55	26	6	34;42	2	4/72	50	---	---	---	---	1784
73	22	6	45;67	---	---	15	---	---	---	---	1785
41	22	4	---	29	9/47	10	1.7	---	---	---	1786
90	36	7	---	30	10/51	2	---	---	---	---	1787
80	42	8	---	24	10/59	8	---	---	---	---	1788
60	20	7	---	8	5/51	4	---	---	---	---	1789
40	---	---	---	---	---	0	---	---	---	---	1791
65	20	8	---	14	8/52	5	---	---	---	---	1792
77	36	7	---	20	4/55	5	---	---	---	---	1793
57	57	8	---	30	7/56	20	---	8	400	---	1794
82	62	6	---	30	9/59	30	---	---	---	---	1795
55	37	7	40	20	3/61	15	---	---	---	---	1796
82	49	6	---	30	8/57	20	---	---	---	---	1797
103	31	7	---	15	11/52	12	---	---	---	---	1798
60	50	7	---	16	1951	30	---	---	---	---	1799
53	42	5	---	18	10/50	50	---	---	---	---	1800
63	52	6	32	20	8/69	25	1.4	---	---	---	1801
57	57	8	---	10	10/60	30	1.5	---	---	---	1802
45	30	6	---	10	1951	15	---	---	---	---	1803

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ litholog
Number	Lat-Long							
Cw-1804	4142-8026	R. F. Loucks	Moody Drilling Co., Inc.	1951	H	1165	H	Mcu/ss
1805	4142-8027	Maurice Campbell	Max Hickernell	1963	H	1161	H	Mcu/ss
1806	4142-8027	Wilbur Campbell	Moody Drilling Co., Inc.	1960	H	1129	S	Dco/sh
1807	4142-8027	Bertha Thomas	do.	1948	H	1138	S	Dco/st
1808	4142-8028	Mack Stetson	Max Hickernell	1972	H	1070	S	Dco/sh
1809	4142-8030	R. M. Bertram	Moody Drilling Co., Inc.	1949	H	1122	S	Dco/st
1810	4142-8030	E. L. Marzolf	Berkley D. Bossard	1973	H	1162	S	Dco/st
1811	4143-8008	Moriarity Bros.	Max Hickernell	1972	C	1125	T	Qo/gr
1812	4143-8008	C. E. Hills	Moody Drilling Co., Inc.	1958	H	1130	T	Dco/sh
1813	4143-8009	H. E. Lenhart	do.	1952	H	1215	S	Dco/st
1815	4143-8009	Blain Schlosser	Max Hickernell	1965	H	1151	S	Dco/st
1816	4143-8010	G. M. Coy	do.	1972	H	1292	S	Qo/gr
1818	4143-8010	J. R. Koehler	do.	1965	H	1270	S	Qo/gr
1819	4143-8010	A. V. Williams	Berkley D. Bossard	1969	H	1242	S	Qo/gr
1820	4143-8011	D. L. Durfee	Max Hickernell	1963	H	1320	S	Mcu/ss
1821	4143-8011	W. J. Karpinski	Moody Drilling Co., Inc.	1969	H	1341	S	Mcu/ss
1822	4143-8012	C. L. Terrill	do.	1958	H	1302	S	Mcu/ss
1823	4143-8012	D. J. Zacherl	do.	1951	H	1315	H	Mcu/ss
1824	4143-8012	Malvin Newhard	do.	1951	H	1198	S	Dco/st
1825	4143-8012	Ronald Kuntz	Max Hickernell	1961	H	1285	S	Mcu/ss
1826	4143-8014	J. G. Reichel	do.	1964	H	1121	S	Dco/sh
1827	4143-8014	Merle Webster	Moody Drilling Co., Inc.	1950	H	1160	S	Dco/st
1828	4143-8014	Robert Page	Max Hickernell	1966	H	1140	S	Dco/st
1829	4143-8015	G. L. Eckart	Moody Drilling Co., Inc.	1955	H	1350	S	Mcu/ss
1830	4143-8016	Joseph Francesconi	Max Hickernell	1961	H	1352	S	Mbe/st
1831	4143-8016	Carl Troupe	Moody Drilling Co., Inc.	1965	H	1350	S	Mcu/ss
1832	4143-8016	C. M. Smith	Max Hickernell	1961	H	1360	H	Mcu/ss
1833	4143-8016	Paul McGrail	do.	1972	H	1328	S	Mcu/ss
1834	4143-8017	Andrew Bonnano	Moody Drilling Co., Inc.	1952	H	1290	S	Mbe/st
1835	4143-8017	W. B. Titsler	do.	1960	H	1282	S	Mcu/ss
1836	4143-8017	J. C. Moertel	do.	1952	H	1272	S	Mcu/ss
1837	4143-8018	J. O. Kardosh	do.	1949	H	1359	S	Msh/st
1838	4143-8018	Andrew Bonanno	do.	1953	H	1325	S	Mo/st
1839	4143-8019	C. J. McGee	do.	1965	H	1252	S	Mcu/ss
1840	4143-8020	E. R. Daniels	do.	1957	H	1060	S	Qo/gr
1841	4143-8022	F. C. Kalup	do.	1952	H	1142	S	Dco/st
1842	4143-8022	Joseph Bleicher	do.	1956	S	1090	S	Dco/st
1843	4143-8022	do.	do.	1957	H	1080	S	Dco/sh
1844	4143-8022	Paul Stuyvesant	do.	1951	H	1042	S	Dco/st
1845	4143-8022	G. S. Dunbar	do.	1964	H	1010	S	Dco/sh
1846	4143-8023	L. O. Kelleher	do.	1952	H	1150	S	Dco/st
1847	4143-8024	Glen Nicklas	do.	1971	H	1152	S	Qo/sdgv
1848	4143-8025	Stefan Krem	do.	1955	H	1192	H	Mcu/ss
1849	4143-8028	Mike Kalich	Max Hickernell	1972	H	1091	S	Dco/sh
1850	4143-8029	N. K. Parch	Moody Drilling Co., Inc.	1953	H	1132	H	Dco/st
1851	4144-8007	Melvin Drake	Max Hickernell	1965	H	1112	S	Dco/st
1852	4144-8007	H. P. Crist	do.	1965	H	1120	S	Qo/gr
1853	4144-8007	J. J. Krupski	do.	1965	H	1208	S	Qo/gr
1854	4144-8008	John Kubachko	Moody Drilling Co., Inc.	1951	H	1124	T	Dco/st
1855	4144-8008	Eunice Gurewitz	do.	1963	H	1120	T	Dco/sh
1856	4144-8008	Dr. K. W. Bertram	do.	1963	H	1120	T	Dco/st
1857	4144-8008	T. E. Jackson	do.	1953	H	1118	T	Dco/st
1858	4144-8008	W. Z. Krupski	Max Hickernell	1962	H	1253	S	Qo/gr
1859	4144-8008	E. J. Currie	Moody Drilling Co., Inc.	1953	H	1270	S	Qo/gr
1860	4144-8009	J. W. Reed	do.	1950	H	1170	H	Qo/sdgv
1863	4144-8009	Richard Shelenberger	Max Hickernell	1965	H	1258	S	Qo/gr
1864	4144-8009	A. D. Taylor	do.	1961	H	1242	S	Dco/sh
1865	4144-8010	L. R. Hutchinson	Moody Drilling Co., Inc.	1955	H	1265	S	Dco/st
1866	4144-8010	G. E. Felmlee	Max Hickernell	1972	H	1305	H	Dco/sh
1867	4144-8010	W. Geiger, Jr.	Moody Drilling Co., Inc.	1950	H	1255	S	Dco/st
1868	4144-8012	Carl Terry	Max Hickernell	1961	H	1140	S	Dco/sh
1869	4144-8012	Virginia McCrory	Moody Drilling Co., Inc.	1948	H	1180	S	Qo/gr
1870	4144-8012	D. P. Hoegerl	do.	1957	H	1219	S	Dco/sh
1871	4144-8012	Edward Shorts	do.	1950	H	1242	S	Dco/st
1872	4144-8012	F. E. Hites	do.	1952	H	1230	S	Dco/st
1873	4144-8016	H. T. Peterman	do.	1955	H	1320	S	Mcu/ss
1874	4144-8016	D. J. Brown	do.	1948	H	1272	S	Mcu/ss
1875	4144-8017	P. W. Robison	do.	1950	H	1284	S	Mcu/ss
1876	4144-8017	William Morris	do.	1948	H	1250	S	Dco/st
1877	4144-8017	W. E. Shaw	do.	1969	H	1260	S	Qo/gr
1878	4144-8017	Kenneth Compton	Max Hickernell	1963	H	1235	S	Dco/sh
1879	4144-8018	J. B. Raber	Moody Drilling Co., Inc.	1954	H	1302	S	Mbe/st
1880	4144-8018	Ross Corey	do.	1951	H	1308	S	Mcu/ss
1881	4144-8019	J. B. Webb	do.	1949	H	1338	S	Mcu/ss
1882	4144-8019	do.	do.	1963	H	1335	S	Mcu/ss
1883	4144-8019	J. W. Joslin	Max Hickernell	1960	H	1310	S	Mbe/st
1884	4144-8020	Ralph Keene	Moody Drilling Co., Inc.	1954	H	1020	S	Dco/st
1885	4144-8020	E. A. Snyder	do.	1956	H	1202	S	Dco/sh
1887	4144-8021	Miller Whippo	Urson Shellito	1954	H	970	S	Qo/s
1888	4144-8021	Robert Loughuer	Moody Drilling Co., Inc.	1951	H	1010	S	Qo/gr
1889	4144-8021	Raymond Brown	Max Hickernell	1964	H	1020	S	Qo/gr
1890	4144-8021	Nancy Hoesch	do.	1972	H	1010	S	Qo/sdgv

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hardness (gpg)	Specific conductance (micromhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
53	41	5	---	13	---	50	---	---	---	---	Cw-1804
43	12	6	20	20	12/63	8	.35	---	---	---	1805
82	37	8	---	20	1/60	5	---	---	---	---	1806
60	33	4	---	21	12/48	15	1.4	---	---	---	1807
85	29	6	---	10	8/72	5	---	---	---	---	1808
60	30	7	---	10	5/49	20	---	---	---	---	1809
47	41	6	32	21	5/73	14	1.2	---	---	---	1810
25	25	6	22	2	3/72	10	---	---	---	---	1811
77	36	6	---	18	8/58	1	---	---	---	---	1812
61	31	7	---	12	3/52	10	---	---	---	---	1813
92	83	6	80;88	12	7/65	5	---	---	---	---	1815
99	99	6	---	20	6/72	12	---	---	---	---	1816
92	92	6	85	28	8/65	20	---	---	---	---	1818
98	98	6	92	12	4/69	12	.25	---	---	---	1819
42	38	6	40	19	9/63	20	1.8	---	---	---	1820
95	20	6	---	42	5/69	20	---	---	---	---	1821
50	20	6	---	13	9/58	6	---	---	---	---	1822
73	30	---	---	15	8/51	5	---	---	---	---	1823
80	21	8	---	40	10/51	6	---	---	---	---	1824
50	28	7	29	12	10/61	12	.32	---	---	---	1825
38	21	6	23;32	7	6/64	30	2.7	---	---	---	1826
89	20	7	---	20	2/50	1	---	---	---	---	1827
75	56	6	62;73	15	5/66	---	---	---	---	---	1828
140	40	8	---	110	6/55	15	---	---	---	---	1829
110	29	7	33;95	20	9/61	4	.04	---	---	---	1830
166	---	6	---	100	6/65	12	.60	---	---	---	1831
120	25	7	40;108	75	10/61	5	.11	---	---	---	1832
118	35	6	93;114	---	---	15	---	---	---	---	1833
65	22	7	---	10	7/52	5	---	---	---	---	1834
83	72	8	---	25	9/60	15	---	---	---	---	1835
78	65	7	---	22	1952	10	---	---	---	---	1836
80	40	5	60	12	9/49	1	---	---	---	---	1837
55	33	7	---	14	12/53	6	---	---	---	---	1838
105	24	6	47	43	---	10	.16	---	---	---	1839
124	124	6	---	65	3/57	10	---	---	---	---	1840
60	48	8	---	34	8/52	10	---	---	---	---	1841
83	25	8	---	0	11/56	20	---	---	---	---	1842
109	38	8	---	30	11/57	1	---	---	---	---	1843
106	24	7	---	12	4/51	1	---	---	---	---	1844
92	47	6	50;77	32	10/64	4	.09	---	---	---	1845
64	40	8	---	12	1952	4	---	---	---	---	1846
36	35	6	---	0	1/71	20	---	---	---	---	1847
70	41	7	---	25	2/55	20	---	---	---	---	1848
55	42	8	45;51	18	9/72	20	---	---	---	---	1849
53	35	8	---	12	4/53	7	---	---	---	---	1850
60	31	6	48;56	7	7/65	10	---	---	---	---	1851
39	39	6	39	3	7/65	10	2.0	---	---	---	1852
97	97	6	93	80	5/65	5	---	---	---	---	1853
31	16	7	---	3	3/51	4	---	---	---	---	1854
99	18	8	15;32	6	10/63	40	3.6	---	---	---	1855
97	14	8	---	20	4/63	4	---	---	---	---	1856
50	23	6	---	6	10/53	16	---	---	---	---	1857
141	141	7	127	14	5/62	4	---	---	---	---	1858
140	140	7	---	125	1/53	3	---	---	---	---	1859
106	106	7	---	40	5/50	25	---	---	---	---	1860
60	60	7	60	13	12/65	6	---	---	---	---	1863
70	49	6	60	10	7/61	7	.17	---	---	---	1864
90	30	8	---	35	6/55	15	---	---	---	---	1865
88	32	6	67;79	28	3/72	10	---	---	---	---	1866
53	25	5	---	15	6/50	5	---	---	---	---	1867
105	72	7	105	55	10/61	1	.06	---	---	---	1868
52	52	4	---	21	5/48	3	---	---	---	---	1869
94	42	6	---	20	10/57	20	---	---	---	---	1870
72	44	5	---	23	6/50	4	---	---	---	---	1871
96	40	8	---	21	8/52	5	---	---	---	---	1872
90	26	7	---	55	1955	10	---	---	---	---	1873
60	20	6	---	20	9/48	8	.26	---	---	---	1874
72	30	7	---	28	6/50	6	---	---	---	---	1875
80	68	6	70	14	7/48	3	.05	---	---	---	1876
71	71	8	---	20	5/69	5	---	---	---	---	1877
80	26	6	32;56	13	8/63	5	.07	---	---	---	1878
60	34	7	---	15	7/54	10	---	---	---	---	1879
100	20	8	---	30	5/51	30	---	---	---	---	1880
134	16	5	---	75	5/49	5	.12	---	---	---	1881
138	---	---	---	---	11/63	---	---	---	---	---	1882
70	22	7	30;65	30	9/60	20	1.0	---	---	---	1883
100	72	7	---	12	7/54	4	---	---	---	---	1884
88	40	8	---	20	9/56	0.3	---	---	---	---	1885
183	183	7	50	F	9/54	0.3	---	---	---	---	1887
78	78	7	---	50	7/51	15	---	---	---	---	1888
257	257	6	253	60	7/64	15	.50	---	---	---	1889
86	86	6	82	14	5/72	3	---	---	---	---	1890

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-1891	4144-8021	E. J. Onderko	Moody Drilling Co., Inc.	---	H	1023	S	Qo/gr
1893	4144-8022	Paul 8lanchard	do.	1949	H	1062	S	Qo/---
1894	4144-8022	C. L. Winter	do.	1952	H	1050	H	Dco/st
1895	4144-8022	Nick Crivelli	Max Hickernell	1972	H	1043	H	Dco/sh
1896	4144-8022	Albert Vendel	Moody Drilling Co., Inc.	1953	H	1035	S	Dco/st
1897	4144-8023	Roy Foster	do.	1946	H	1072	S	Dco/st
1898	4144-8023	Ward Weaver	Max Hickernell	1972	H	1062	S	Dco/sh
1899	4144-8D23	John Vendel	Moody Drilling Co., Inc.	1949	H	1050	S	Dco/sh
1900	4144-8024	T. G. Fuller	Max Hickernell	1965	H	1125	S	Dco/sh
1901	4144-8024	Elmer Onderko	Moody Drilling Co., Inc.	1955	H	1120	S	Dco/st
1902	4144-8025	Joseph McQuigan	do.	1957	H	1165	S	Dco/sh
1903	4144-8025	R. F. Morgan	do.	1960	H	1142	H	Dco/sh
1904	4144-8027	Ollie Starcheski	8erkley D. 8ossard	1973	H	1171	H	Dco/st
1905	4144-8029	Donald Bortnick	Max Hickernell	1964	H	1141	H	Dco/sh
1906	4144-8030	Steve Drienka	do.	1963	H	1150	S	Dco/st
1907	4130-8022	G. H. Cooper	Moody Drilling Co., Inc.	1961	H	1050	S	Mbe/st
1908	4147-8021	Anson Sowry	do.	1963	H	965	S	Qo/gr
1909	4147-8022	N. E. Jarvey	do.	1957	H	912	T	Qo/sdgv
1910	4147-8022	Family Affair Gift Shop	do.	1955	H	935	T	Qo/sdgv
1912	4147-8024	Leroy Wheeler	do.	1952	H	1002	S	Dco/st
1913	4147-8027	David Lamb	do.	1952	H	1061	S	Dco/st
1914	4147-8027	N. J. 8lood	do.	1953	H	1062	S	Dco/sh
1915	4147-8028	F. J. Minnick	do.	1951	H	1060	S	Dco/st
1916	4147-8029	James Artman	Max Hickernell	1972	H	1067	S	Dco/sh
1917	4147-8031	E. W. Martin	do.	1965	H	1071	S	Dco/st
1918	4148-8009	Lot Freeman	do.	1963	H	1295	S	Dco/sh
1919	4148-8013	Cussewago Twp. Elem. Sch.	Moody Drilling Co., Inc.	1955	T	1152	S	Dco/st
1920	4148-8014	James VanZandt	Max Hickernell	1972	H	1222	S	Dco/sh
1921	4148-8017	F. I. Greenlee	Moody Drilling Co., Inc.	1959	H	1160	S	Dco/st
1923	4148-8017	Neil Hotchkiss	do.	1952	H	1178	S	Dco/sh
1924	4148-8017	W. F. Wheeler	Max Hickernell	1965	H	1162	S	Dco/st
1925	4148-8018	Robert Hayes	Moody Drilling Co., Inc.	1949	H	1155	S	Dco/st
1926	4148-8019	R. P. Lenhardt	do.	1951	H	1200	S	Dco/sh
1927	4148-8020	H. H. Sheldon	do.	1951	H	1155	S	Dco/st
1928	4148-8022	Albro Packing Co.	do.	1952	C	912	T	Qo/gr
1929	4148-8022	Bor. of Springboro	do.	---	H	1010	S	Dco/st
1930	4148-8022	Mrs. E. Gribus	---	1960	H	948	S	Dco/sh
1931	4148-8022	Robert Field	Moody Drilling Co., Inc.	1964	H	925	S	Dct/sh
1933	4148-8022	Claude Lowry	Max Hickernell	1963	H	975	S	Dct/st
1934	4148-8022	Shadeland Farms	Moody Drilling Co., Inc.	1955	H	902	T	Qo/gr
1935	4148-8023	James Collier	do.	1950	H	950	S	Dct/sh
1936	4148-8023	do.	do.	1950	S	942	S	Dct/st
1937	4148-8024	Daniel Sablyak	do.	1954	H	1045	H	Dco/st
1938	4148-8024	do.	do.	---	H	1045	H	Dco/st
1939	4148-8025	W. G. Reinhart	Max Hickernell	1964	H	1030	S	Dco/sh
1940	4148-8028	8eaver Center Community Center	Moody Drilling Co., Inc.	1969	H	1040	S	Dct/ss
1941	4148-8028	L. L. Carney	do.	1952	H	1032	S	Dco/st
1942	4148-8028	8enjamin Gates	do.	1961	H	1028	S	Dco/st
1943	4148-8028	William Fuller	Max Hickernell	1963	H	1040	S	Dco/st
1944	4148-8028	R. F. 8ronson	Moody Drilling Co., Inc.	1952	H	1047	S	Dco/st
1945	4149-8013	Floyd Cutting	do.	1958	H	1158	S	Dco/sh
1946	4149-8014	John Chaklos	do.	1952	H	1158	S	Dco/st
1947	4149-8016	George Hlopick	do.	1951	H	1175	S	Dco/st
1948	4149-8017	Stephen Dillinger	do.	1953	H	1184	H	Dco/st
1949	4149-8022	Serbian St. Sava	do.	1956	P	975	S	Dct/st
1950	4149-8022	Vincent Karr	do.	1958	H	942	S	Dct/sh
1951	4149-8022	George 8aran	do.	1961	H	1100	H	Dco/sh
1952	4148-8022	John Murphy	do.	1961	H	935	T	Dco/st
1953	4149-8025	J. G. Goetz	do.	1957	H	1022	H	Dct/sh
1954	4149-8028	R. C. Clark	do.	1953	H	1000	S	Dco/st
1955	4149-8028	D. W. 8lood	Max Hickernell	1963	H	1000	S	Dco/sh
1956	4149-8028	L. E. Thomas	Moody Drilling Co., Inc.	1965	H	1002	S	Dct/sh
1957	4149-8029	O. L. George	do.	1952	H	1001	S	Qt/c
1958	4150-8018	John Panko	do.	1951	H	1130	S	Dco/st
1959	4150-8020	Harold Eschweiler	do.	1953	H	1140	S	Dco/sh
1960	4150-8020	do.	do.	1951	H	1142	S	Dco/st
1961	4150-8021	J. C. Walker	do.	1954	H	1140	S	Dco/sh
1962	4150-8022	Jack Helmbreck	Max Hickernell	1972	P	1062	S	Dco/sh
1963	4150-8022	J. M. Lascek	Moody Drilling Co., Inc.	1957	H	1065	S	Dco/sh
1964	4150-8024	Richard Loepp	do.	1965	H	875	S	Dct/sh
1965	4150-8024	A. G. Hughes	do.	1952	H	914	H	Dct/st
1966	4150-8025	W. Cullers	do.	1965	H	890	T	Dct/sh
1967	4150-8025	Coral 8raden	do.	1965	H	920	S	Dct/sh
1968	4150-8028	G. L. Law	do.	1961	H	980	S	Dct/st
1969	4134-8025	John Westerman	Max Hickernell	1970	H	1122	S	Mcu/ss
1970	4134-8028	Anna Paradise	Charles R. Smith	1970	H	1122	S	Mbe/ss
1972	4134-8029	Kenneth Kelly	do.	1970	H	1096	S	Mcu/ss
1973	4134-8030	Judy Sawocha	Hazel 8. Hollick	1968	H	1050	W	Mcu/ss
1974	4135-8028	Jim Edwards	Charles R. Smith	1970	H	1108	S	Mcu/ss

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hardness (gpg)	Specific conductance (micromhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
106	106	7	---	---	---	15	---	---	---	---	Cw-1891
72	72	7	---	30	7/49	15	.56	---	---	---	1893
95	80	7	---	40	9/52	3	---	---	---	---	1894
103	68	8	72	15	6/72	3	---	---	---	---	1895
187	85	7	---	65	2/53	0.5	---	---	---	---	1896
80	54	6	---	---	---	0.5	---	---	---	---	1897
80	46	6	71	10	5/72	4	---	---	---	---	1898
106	60	7	---	60	7/49	0.5	---	---	---	---	1899
42	42	6	42	10	3/65	20	---	---	---	---	1900
60	42	8	---	14	11/55	10	---	---	---	---	1901
78	60	6	---	17	10/57	10	---	---	---	---	1902
60	44	6	---	8	8/60	10	---	---	---	---	1903
33	32	6	18	10	5/73	7	.47	12	550	---	1904
35	24	6	25	10	5/64	50	5.0	---	---	---	1905
40	25	6	26;34	7	8/63	5	.15	---	---	---	1906
110	17	8	70	40	11/61	20	20	---	---	---	1907
86	86	8	86	76	10/63	10	2.5	---	---	---	1908
60	60	6	---	12	10/57	15	---	---	---	---	1909
65	65	8	---	40	8/55	20	---	---	---	---	1910
60	22	7	---	10	1952	0.5	---	---	---	---	1912
35	15	24	---	12	7/52	0.5	---	6	540	---	1913
30	14	24	---	9	11/53	4	---	---	---	---	1914
48	24	8	---	---	11/51	2	---	---	---	---	1915
58	31	8	34	7	5/72	2	---	---	---	---	1916
50	31	8	22	18	10/65	1	---	---	---	---	1917
63	---	6	36;54	F	6/63	15	---	6	600	---	1918
175	43	8	---	30	10/55	8	---	---	---	---	1919
75	23	8	32;64	20	4/72	10	---	---	---	---	1920
55	---	---	---	4	5/59	4	---	---	700	---	1921
60	30	12	---	9	11/52	1	---	---	---	---	1923
50	18	12	16;32	4	8/65	2	---	---	---	---	1924
46	41	7	---	15	8/49	10	.53	---	600	---	1925
50	12	12	---	2	6/51	2	---	---	800	---	1926
50	27	12	---	10	12/51	2	---	---	---	---	1927
70	70	8	---	12	3/52	100	50	---	---	---	1928
56	17	6	---	10	12/50	20	---	---	---	---	1929
115	62	8	---	43	10/60	1	---	---	---	---	1930
45	22	12	6;43	5	5/64	5	.13	---	---	---	1931
80	28	8	32;65	12	10/63	12	.18	---	---	---	1933
39	39	8	---	7	7/55	50	---	---	---	---	1934
111	52	7	---	40	11/50	2	---	---	---	---	1935
70	40	10	---	18	11/50	---	---	---	1100	---	1936
65	30	7	---	15	4/54	1	---	9	720	---	1937
75	---	---	---	---	---	---	---	---	---	---	1938
60	26	8	15	8	6/64	2	.23	---	---	---	1939
283	11	10	---	190	4/59	15	---	---	---	---	1940
68	17	8	---	5	1952	1	---	---	---	---	1941
35	15	8	10	---	5/61	8	---	---	---	---	1942
34	18	8	19	8	9/63	2	---	---	---	---	1943
43	21	10	---	---	---	0.5	---	---	---	---	1944
80	35	6	---	16	7/58	20	---	---	---	---	1945
41	32	7	---	10	7/52	8	---	---	---	---	1946
70	23	---	---	6	1951	6	---	---	---	---	1947
28	22	12	---	4	4/53	10	---	---	---	---	1948
130	18	8	---	6	7/56	25	---	---	---	---	1949
100	50	6	---	30	4/58	2	---	---	---	---	1950
70	37	8	---	29	11/61	7	---	---	---	---	1951
82	51	8	---	31	2/61	2	---	---	---	---	1952
100	41	8	---	14	10/57	8	---	---	---	---	1953
40	21	---	---	21	8/53	0.5	---	---	---	---	1954
40	30	8	30	6	6/63	2	.04	---	---	---	1955
70	18	---	---	0	4/65	---	---	---	---	---	1956
28	28	7	---	10	12/52	3	---	---	---	---	1957
90	20	8	---	10	8/51	1	---	---	1100	---	1958
40	23	8	---	9	6/53	10	---	---	---	---	1959
50	25	12	---	10	12/51	0.5	---	---	---	---	1960
60	32	7	---	12	5/54	5	---	---	1500	---	1961
60	27	12	30	3	4/72	5	---	---	---	---	1962
72	25	8	---	15	6/57	2	---	---	---	---	1963
60	28	6	23	7	5/65	2	---	---	---	---	1964
92	18	7	---	20	12/52	0.5	---	---	---	---	1965
60	32	6	12;20	12	5/65	3	.15	---	---	---	1966
31	18	6	12	10	5/65	1	---	---	---	---	1967
35	24	8	22	15	6/61	6	---	---	---	---	1968
140	29	8	95;120;138	80	7/70	25	1.2	---	---	---	1969
66	26	6	57	49	8/70	14	2.0	---	---	---	1970
81	33	6	76	58	8/70	14	3.5	---	---	---	1972
71	27	6	48;63	28	4/68	---	---	---	---	---	1973
62	22	6	62	42	7/70	---	---	---	---	---	1974

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-1975	4135-8028	George Hollick	Hazel B. Hollick	1967	H	1098	S	Mcu/ss
1976	4135-8028	Fred Kirk	Harland H. Knapp	1969	H	1092	S	Mcu/ss
1977	4135-8029	Helen Valcho	Hazel B. Hollick	1967	H	1038	S	Mcu/ss
1978	4136-8025	J. A. Bennett	do.	1967	H	1070	S	Mcu/ss
1979	4137-8029	Stanley Lauff	Perl A. Litwiler	1970	H	1055	S	Dco/sh
1980	4137-8029	Mike Habzanski	do.	1970	H	1044	S	Dco/sh
1981	4137-8030	Jacob Niehl	Hazel B. Hollick	1967	H	1018	S	Dco/sh
1982	4138-8029	Edward Szuba	Charles R. Smith	1970	H	1028	S	Dco/st
1984	4139-8027	James Buffington	Berkley O. Bossard	1968	H	1018	S	Qt/c
1985	4140-8011	Alex Quoresimo	Max Hickernell	1968	H	1257	S	Mcu/ss
1986	4140-8012	R. D. Foreman	do.	1967	H	1275	S	Mcu/ss
1987	4142-8010	P. H. Edwards	Herbert G. Orr	1967	H	1400	S	Msh/st
1989	4142-8015	George Dillaman	Max Hickernell	1967	H	1433	S	Msh/st
1990	4143-8010	Shartle & Walker	do.	1967	H	1245	S	Dco/sh
1991	4143-8013	M. E. Smith	Herbert G. Orr	1967	H	1112	T	Qo/gr
1992	4144-8012	Louis Papineau	do.	1967	H	1138	S	Qo/gr
1994	4133-8028	John Vassel	R. E. Mohr Well Drilling	1973	H	1098	S	Mcu/ss
1995	4131-8027	Robert Sheaffer	do.	1972	H	1050	S	Qo/sdgv
1996	4139-8027	Edward Lutz	do.	1972	H	1055	S	Dco/sh
1997	4141-8025	W. C. Martin	Harland H. Knapp	1971	H	1110	S	Dco/st
1998	4149-8028	K. W. Thomas	Moody Drilling Co., Inc.	1952	H	1000	S	Dco/sh
2000	4146-8028	H. G. Schmidt	Berkley O. Bossard	1973	H	1092	S	Dco/sh
2001	4137-8021	William Rebor	do.	1973	H	1230	S	Mcu/ss
2003	4131-8028	J. J. McFarland	Lininger Drilling & Pumps	1961	H	1020	S	Qo/sdgv
2004	4131-8024	James Potase	do.	1965	H	1278	S	Mm/sh
2005	4150-8022	S. L. Potter	Berkley D. Bossard	1973	S	1052	S	Dco/st
2006	4150-8022	Anna Ebert	do.	1973	H	1072	S	Dco/st
2007	4145-8016	R. C. Orda	do.	1969	U	1245	H	Dco/sh
2008	4145-8016	do.	do.	1969	H	1230	S	Dco/sh
2012	4129-8026	William McElhaney	R. E. Mohr Well Drilling	1972	H	1100	S	Msh/st
2013	4129-8027	Anthony Sinicrope	do.	1973	H	1002	H	Mcu/ss
2014	4134-8010	Paul Ball	Max Hickernell	1973	H	1390	S	Msh/st
2016	4135-8028	C. L. Frye	Charles R. Himes	1972	H	1080	S	Mcu/ss
2018	4137-8016	T. A. Offi	Max Hickernell	1973	H	1198	S	Qo/gr
2019	4140-8011	O. O. Beatty	Raymond L. Butterfield	1971	H	1298	H	Mcu/ss
2020	4140-8014	Raymond Deeter	Max Hickernell	1973	H	1385	S	Mcu/ss
2021	4141-8014	W. A. Ketcham	do.	1973	H	1415	H	Msh/st
2022	4142-8014	T. L. Williams	Moody Drilling Co., Inc.	1956	H	1378	S	Mcu/ss
2023	4143-8010	Hayfield Estates	Raymond L. Butterfield	1971	P	1295	S	Dco/sh
2024	4143-8009	W. F. Fleming	Max Hickernell	1967	H	1210	S	Dco/sh
2025	4143-8009	do.	do.	1965	H	1183	S	Dco/st
2026	4143-8009	do.	do.	1963	H	1175	S	Dco/st
2027	4143-8009	do.	do.	1969	H	1190	S	Dco/st
2028	4143-8010	do.	do.	1966	H	1262	S	Dco/sh
2029	4144-8009	Harold Scannell	do.	1973	H	1205	S	Qo/gr
2030	4144-8009	B. A. Siebold	do.	1973	H	1208	S	Dco/st
2032	4142-8021	Robert Goodrich	do.	1973	H	1082	H	Qo/gr
2033	4139-8024	W. F. Moats	Harland H. Knapp	1972	C	1065	S	Dco/st
2034	4142-8022	J. J. Yunik	Lorenze Lee Hall	1973	H	1200	S	Mcu/ss
2035	4139-8025	R. H. Knierman	Max Hickernell	1973	H	1071	S	Dco/st
2036	4131-8012	Pittsburgh Plate Glass Co.	Moody Drilling Co., Inc.	1967	N	1328	H	Msl/ss
2038	4145-8022	Bor. of Conneautville	do.	1973	P	940	T	Qo/sdgv
2039	4145-8021	do.	do.	1973	P	950	T	Dco/sh
2040	4144-8021	do.	do.	1973	P	956	T	Oct/sh
2041	4144-8021	do.	do.	1973	P	960	T	Qo/gr
2042	4136-8013	Vernon Twp.	Layne-New York Co., Inc.	1971	T	1088	S	Dco/sh
2044	4137-8010	Imperial Development Corp.	Moody Drilling Co., Inc.	1973	C	1494	H	Mcu/ss
2045	4136-8018	K. Moody	do.	1929	H	1120	S	Mbe/ss
2046	4138-8018	Conneaut Lake Park Inc.	do.	1957	P	1077	T	Qo/sdgv
2047	4137-8009	Park Avenue Plaza	do.	1955	C	1075	T	Qo/sdgv
2048	4138-8009	City of Meadville	---	1947	P	1080	T	Qo/sdgv
2049	4139-8010	do.	Robert Keaton	1928	P	1079	T	Qo/sdgv
2051	4139-8010	do.	do.	1930	P	1093	T	Qo/sdgv
2053	4139-8010	do.	---	1944	P	1080	T	Qo/sdgv
2055	4139-8010	.do.	Robert Keaton	1930	U	1082	T	Oct/sh
2056	4143-8008	Bor. of Saegertown	Moody Drilling Co., Inc,	1956	P	1110	T	Qo/sdgv
2057	4143-8008	do.	do.	1968	P	1115	T	Qo/sdgv
2059	4148-8022	Bor. of Springboro	---	---	P	910	T	Qo/sdgv
2060	4130-8008	F. H. Cornell	Max Hickernell	1965	H	1382	H	Msl/ss
2061	4130-8013	Arthur Myers	James R. Worley	1973	H	1268	S	Msl/ss
2062	4130-8013	Thomas Luzier	W. G. McDowell	1973	H	1308	H	Msl/ss
2063	4130-8015	Albert Porter	Max Hickernell	1963	H	1263	S	Msh/st
2064	4130-8018	Fallowfield Ch.	do.	1972	H	1310	S	Mcu/ss
2065	4131-8009	W. H. Mott	Moody Drilling Co., Inc.	1965	H	1240	S	Msh/st
2066	4131-8009	G. J. Vreeland	Max Hickernell	1969	H	1170	S	Msh/st
2068	4131-8011	H. A. Dunn	do.	1963	H	1315	S	Qo/sdgv
2069	4131-8015	H. G. Dearment	do.	1964	H	1260	S	Qo/gr
2070	4132-8015	Charles Lowther	do.	1962	H	1290	S	Qo/gr

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
73	21	6	61	8	8/67	11	.41	---	---	---	1975
67	21	6	42;58	35	5/69	20	---	---	---	---	1976
53	23	6	42	3	7/67	14	.48	---	---	---	1977
61	19	6	44;56	26	10/67	11	.44	7	400	---	1978
80	33	6	45	8	4/70	6	.09	---	---	---	1979
65	30	6	40	10	4/70	20	.57	---	---	---	1980
48	22	6	18	2	5/67	12	.63	---	---	---	1981
49	13	6	42	5	8/70	14	1.3	---	---	---	1982
54	54	6	47	4	6/68	2	.04	---	---	---	1984
76	37	6	38;49;64	10	5/68	30	---	---	---	---	1985
81	18	6	52;69	42	6/67	11	---	---	---	---	1986
50	44	6	25;45	10	6/67	30	1.0	---	---	---	1987
75	19	8	21;40	16	7/67	15	---	---	---	---	1989
98	24	6	35;69;81	20	7/67	20	.50	---	---	---	1990
27	20	6	19	5	6/67	15	3.0	---	---	---	1991
22	15	6	8;20	7	6/67	10	2.0	---	---	---	1992
95	32	7	---	14	2/73	6	.17	---	---	---	1994
102	104	7	---	55	11/72	6	.24	---	---	---	1995
83	60	7	---	18	8/72	8	.12	---	---	---	1996
60	42	6	45;52	20	8/71	20	.80	---	---	---	1997
35	31	8	---	12	7/52	4	---	---	---	---	1998
75	---	---	30	13	7/73	1	.02	5	550	---	2000
193	132	6	22;168	157	7/73	30	2.5	---	---	---	2001
99	99	6	---	6	6/61	5	.21	---	---	---	2003
75	23	7	---	17	3/65	50	7.1	---	---	---	2004
50	36	8	12	6	6/73	1	.02	8	650	---	2005
50	20	8	22	7	6/73	2	.05	8	450	---	2006
155	23	6	---	26	9/69	0.4	---	---	---	---	2007
30	22	6	14	3	9/69	6	.32	---	---	---	2008
80	19	7	---	42	10/72	40	3.1	---	---	---	2012
90	86	7	85	32	4/73	10	.56	---	---	---	2013
118	32	6	42;87;98	---	---	10	---	---	---	---	2014
57	20	6	---	18	8/72	20	1.7	---	---	---	2016
93	93	6	89	8	6/73	20	---	---	---	---	2018
79	42	8	45;76	40	5/71	15	1.5	---	---	---	2019
190	83	6	92;178	---	---	10	---	---	---	---	2020
88	19	8	61;79	---	---	8	---	---	---	---	2021
130	46	6	---	40	1956	5	---	---	---	---	2022
44	30	8	30;40	10	7/71	18	---	---	---	---	2023
63	50	6	58	12	6/67	20	---	---	---	---	2024
53	28	6	34;46;51	9	7/65	30	---	---	---	---	2025
68	34	6	35;61;68	18	6/63	7	.14	---	---	---	2026
79	45	6	54;76	13	7/69	15	.32	---	---	---	2027
151	135	7	145	28	8/66	20	---	---	---	---	2028
53	53	6	49	9	8/73	10	---	---	---	---	2029
74	32	6	---	6	5/73	8	---	---	---	---	2030
196	196	6	190	60	9/73	3	---	7	380	---	2032
75	34	6	40;58;64	8	3/72	40	10	---	---	---	2033
67	---	8	20;61	33	7/73	17	.63	---	---	---	2034
61	46	8	41;56	16	5/73	15	---	---	---	---	2035
127	52	6	13;55;97	14	8/67	70	2.2	---	---	---	2036
85	70	8	70	7	6/73	280	20	---	---	---	2038
90	24	8	---	---	---	---	---	---	---	---	2039
153	24	8	---	---	---	---	---	---	---	---	2040
175	24	8	---	---	---	---	---	---	---	---	2041
240	58	6	---	10	12/71	3	---	---	---	---	2042
540	32	8	---	70	7/73	---	---	---	---	---	2044
50	25	4	---	---	---	---	---	---	---	---	2045
45	40	10	---	3	2/67	250	100	---	---	---	2046
57	42	12	---	16	10/69	525	175	---	---	---	2047
66	51	18	---	20	9/47	1400	350	---	---	---	2048
80	58	12	---	13	6/29	1000	200	---	---	---	2049
95	75	16	---	32	10/30	2050	342	---	---	---	2051
96	72	16	---	22	6/70	1500	115	---	---	---	2053
344	---	---	26;245	22	2/30	---	---	---	---	---	2055
60	50	12	---	15	11/65	470	16	---	---	---	2056
49	33	12	---	13	11/68	610	102	---	---	---	2057
75	68	8	---	---	---	158	7.2	---	---	---	2059
80	48	6	63;74;78	35	6/65	10	---	---	---	---	2060
83	47	6	---	22	10/73	12	.28	---	---	---	2061
80	38	7	---	30	8/73	7	---	---	---	---	2062
107	89	6	85;104	45	10/63	4	---	---	---	---	2063
425	81	6	355;390	275	9/72	12	.48	2	620	---	2064
105	33	6	87	80	7/65	6	.50	---	---	---	2065
84	26	6	---	45	7/69	20	---	---	---	---	2066
140	140	6	140	55	6/63	15	.23	---	---	---	2068
83	83	8	79	20	2/64	12	---	---	---	---	2069
99	98	6	---	40	9/62	7	---	---	---	---	2070

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-2071	4133-8009	Goldie Willmarth	Max Hickernell	1964	H	1352	S	Msl/ss
2072	4133-8014	Virginia Mushrush	do.	1965	H	1135	S	Msh/st
2073	4133-8016	B. J. Fisher	do.	1964	H	1202	S	Qo/gr
2074	4133-8018	C. H. Hebert	do.	1964	H	1340	H	Msl/ss
2075	4133-8020	Stewart Hall	do.	1965	H	1210	S	Msh/st
2076	4133-8021	J. M. Helbig	Moody Drilling Co., Inc.	---	H	1310	S	Msh/st
2077	4133-8022	Frederick Hart	do.	1960	H	1031	T	Qo/sdgv
2078	4134-8008	E. J. Laver	Max Hickernell	1963	H	1425	S	Msl/st
2079	4134-8009	Kenneth Berry	do.	1973	H	1430	S	Msl/ss
2080	4134-8018	J. B. Markham	do.	1965	H	1225	S	Msh/st
2081	4134-8023	Albert McDade	Harland H. Knapp	1969	H	1088	S	Mcu/ss
2082	4134-8028	C. S. Gesin	Max Hickernell	1963	H	1125	S	Mcu/ss
2083	4135-8008	E. E. Stein	Moody Drilling Co., Inc.	1961	H	1100	S	Qt/gr
2084	4135-8008	do.	Max Hickernell	1962	H	1180	S	Dco/sh
2085	4135-8008	H. W. Worley	James R. Worley	1970	H	1085	S	Qo/sdgv
2086	4135-8008	C. F. Shaulis	Moody Drilling Co., Inc.	1951	H	1140	S	Dco/sh
2087	4135-8013	P. L. Irwin	Max Hickernell	1961	H	1072	T	Qo/gr
2088	4135-8014	George Brown	do.	1962	H	1244	S	Msh/st
2089	4135-8025	Steve Shelatz	do.	1960	H	1076	S	Mcu/ss
2090	4136-8008	West Mead Twp.	do.	1965	H	1068	T	Dco/st
2094	4136-8012	Montgomery Wards	do.	1972	H	1390	S	Msh/st
2095	4136-8013	A. O. Clark	do.	1962	H	1110	S	Qo/gr
2096	4136-8014	Raymond Holabaugh	do.	1963	H	1122	S	Dco/sh
2097	4136-8014	do.	do.	1972	H	1120	S	Dco/sh
2098	4136-8015	Richard Lepley	do.	1972	H	1176	S	Mcu/ss
2100	4136-8018	Conneaut Lake Bor.	---	1961	P	1080	T	Qo/sdgv
2105	4137-8017	Conneaut Lake Sportsman Club	Urson Shellito	---	R	1152	H	Dco/sh
2106	4137-8018	Mary Gully	do.	1954	H	1102	H	Dco/sh
2107	4137-8019	Arthur Hoover, Jr.	Max Hickernell	1962	H	1110	S	Mcu/ss
2108	4137-8019	Indian Museum	Urson Shellito	1959	H	1080	T	Dco/st
2109	4137-8019	John Pribanich	Max Hickernell	1973	H	1082	T	Dco/sh
2110	4137-8020	G. F. Monnie	do.	1964	H	1132	S	Mcu/ss
2111	4137-8022	W. M. Harshaw	do.	1960	H	1142	S	Mcu/ss
2112	4137-8026	Theater Candy Co.	do.	1971	C	1016	H	Qo/gr
2114	4138-8012	W. R. Headley	do.	1960	H	1218	S	Mcu/ss
2117	4138-8012	Elbert Hickernell	do.	1973	H	1215	W	Dco/sh
2120	4138-8014	Pete Hart	do.	1972	H	1332	S	Mcu/ss
2122	4138-8014	G. R. Thomas	do.	1962	H	1354	S	Msh/st
2123	4138-8015	T. F. Etter	Moody Drilling Co., Inc.	1949	H	1220	S	Mo/sh
2124	4138-8016	Ronald Klinginsmith	Max Hickernell	1972	H	1304	S	Mcu/ss
2125	4138-8016	E. G. Hauser	do.	1965	H	1318	S	Msh/st
2126	4138-8017	Leon Furdiga	do.	1962	H	1174	S	Mcu/ss
2127	4138-8018	Park Golf Course, Inc.	do.	1963	R	1082	T	Qo/gr
2128	4138-8023	Donald Ray	Thomas Stampin	1972	H	1065	S	Dco/sh
2129	4138-8023	R. M. Nickerson	Max Hickernell	1962	H	1172	S	Mcu/ss
2131	4139-8010	Charles Hipple	do.	1961	H	1095	T	Qo/gr
2132	4139-8012	C. H. Brunner	do.	1971	H	1110	S	Dco/st
2133	4139-8013	O. T. Petruso	Raymond L. Butterfield	1973	H	1165	S	Dco/sh
2134	4139-8014	Raymond Siverling	Max Hickernell	1962	H	1322	S	Mcu/ss
2136	4139-8015	A. M. Ladner	do.	1973	H	1312	S	Qo/gr
2137	4139-8016	G. L. Lauderbaugh	do.	1973	H	1288	S	Qo/gr
2138	4139-8017	John Trzpis	do.	1962	H	1195	S	Dco/st
2139	4139-8019	James Rhodes	Emerson E. Thompson	1973	H	1106	U	Qo/gr
2140	4139-8019	E. C. Horne	Moody Drilling Co., Inc.	1951	H	1108	T	Dco/st
2141	4139-8022	H. O. Holbrook	Max Hickernell	1973	H	1212	S	Mcu/ss
2142	4139-8024	Rockwell International	Moody Drilling Co., Inc.	1966	N	1022	T	Qo/gr
2146	4140-8013	H. C. Boyles	Max Hickernell	1960	H	1130	S	Dco/st
2149	4140-8016	V. G. Dougherty	---	---	H	1332	S	Qo/---
2151	4140-8016	Joseph Dillinger	Max Hickernell	1973	H	1340	S	Mbe/st
2152	4140-8016	J. E. Deets	do.	1965	H	1355	S	Msh/st
2153	4140-8016	D. O. Zirkle	do.	1971	H	1384	S	Msh/st
2154	4140-8017	Ralph Sandora	Emerson E. Thompson	1973	H	1290	S	Mbe/st
2155	4140-8017	do.	do.	1973	H	1322	S	Msh/st
2156	4140-8019	David Vukelich	Max Hickernell	1969	H	1158	S	Mcu/ss
2157	4140-8019	Mabel Luper	Emerson E. Thompson	1973	H	1188	S	Mcu/ss
2158	4140-8022	Hubert Farley	Max Hickernell	1962	H	1170	S	Qo/gr
2159	4140-8027	C. R. Brown	do.	1972	H	1050	S	Dco/sh
2168	4141-8008	Norris Vogan	do.	1966	H	1232	S	Dco/sh
2169	4141-8008	Raymond Hartley	do.	1963	H	1292	S	Dco/sh
2170	4141-8008	Norris Vogan	do.	1969	H	1225	S	Dco/st
2174	4141-8015	A. L. Blakeslee	do.	1962	H	1438	H	Msh/sh
2175	4141-8015	Q. H. Witt	do.	1973	H	1440	S	Msh/st
2176	4141-8017	R. O. Carlson	do.	1961	H	1320	S	Mo/sh
2177	4141-8018	Emerson Thompson	Emerson E. Thompson	1973	H	1230	S	Mcu/ss
2178	4141-8018	William Grant	do.	1973	H	1317	S	Msh/st
2179	4141-8018	A. L. Tait	Max Hickernell	1961	H	1320	S	Msh/sh
2180	4141-8018	Joseph Harper	Urson Shellito	1959	H	1288	S	Mbe/st
2181	4141-8019	Paul Copeland	Lininger Drilling & Pumps	1973	H	1215	S	Mcu/st
2182	4141-8021	Walter Emerick	Max Hickernell	1973	H	1240	S	Mcu/ss
2184	4141-8029	Maxine Waring	---	---	H	1026	T	Qo/---
2185	4141-8029	O. L. Oskin, Jr.	---	1964	H	1025	S	Qo/---

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
49	10	7	---	25	9/64	7	---	---	---	---	Cw-2071
48	18	6	32;46	23	9/65	15	---	---	---	---	2072
97	97	6	94	35	7/64	15	.60	---	---	---	2073
124	69	6	72	60	3/64	30	---	---	---	---	2074
53	22	6	41;52	24	9/65	10	---	---	---	---	2075
120	---	4	---	---	---	---	---	1	650	---	2076
102	102	6	---	15	8/60	15	---	---	---	---	2077
69	33	6	---	30	4/63	5	---	---	---	---	2078
29	16	6	---	9	6/73	15	---	---	---	---	2079
83	19	6	---	---	---	10	---	---	---	---	2080
75	35	6	---	15	5/69	30	---	---	---	---	2081
82	21	6	---	17	8/63	12	---	---	---	---	2082
70	65	8	---	54	9/61	1	---	---	---	---	2083
152	40	6	55;105;130	50	7/62	24	.80	---	---	---	2084
161	161	6	---	11	9/70	20	---	---	---	---	2085
71	55	4	---	55	1951	3	.20	---	---	---	2086
71	71	6	---	F	7/61	20	---	---	---	---	2087
57	11	6	---	10	11/62	12	---	---	---	---	2088
44	36	8	---	20	8/60	40	---	---	---	---	2089
55	28	8	45;53	F	12/65	5	---	---	---	---	2090
163	127	6	132;158	50	9/72	20	1.3	---	---	---	2094
58	58	6	---	22	10/62	8	---	---	---	---	2095
48	40	6	23;36	18	11/63	5	---	---	---	---	2096
60	34	6	---	10	8/72	19	.89	9	295	8.2	2097
80	36	6	43;61;72	14	10/72	15	---	---	---	---	2098
72	57	12	---	---	---	625	---	---	---	---	2100
63	51	7	---	27	---	5	---	---	---	---	2105
196	196	7	---	30	6/54	7	.35	---	---	---	2106
70	29	7	---	26	8/62	25	---	---	---	---	2107
110	80	---	---	8	9/59	2	.02	---	---	---	2108
220	173	6	---	---	---	0	---	---	---	---	2109
73	50	6	57;69	40	1/64	15	---	---	---	---	2110
102	50	7	---	60	---	---	---	---	---	---	2111
51	51	6	---	8	9/71	20	---	---	---	---	2112
60	31	7	---	10	4/60	20	---	---	---	---	2114
130	73	6	105;118	15	10/73	10	---	---	---	---	2117
130	84	6	92;112;123	15	9/72	15	---	---	---	---	2120
83	24	7	---	5	9/62	6	---	---	---	---	2122
50	21	6	---	12	9/49	6	---	---	---	---	2123
192	64	6	175;180	130	9/72	20	---	---	---	---	2124
111	18	6	24;94;105	65	5/65	5	---	---	---	---	2125
60	25	7	---	22	3/62	5	---	---	---	---	2126
67	67	8	---	10	---	12	---	---	---	---	2127
45	43	6	22	14	11/72	6	.23	---	---	---	2128
82	25	8	30;73	4	11/62	8	---	---	---	---	2129
167	167	8	---	39	9/61	20	---	---	---	---	2131
70	18	---	---	15	1/71	15	---	---	---	---	2132
96	85	6	---	45	7/73	15	---	---	---	---	2133
135	41	6	80;125;135	70	8/62	7	---	---	---	---	2134
198	198	6	198	100	11/73	15	.50	---	---	---	2136
110	110	6	105	60	11/73	20	---	---	---	---	2137
108	99	6	---	40	9/62	6	---	---	---	---	2138
70	70	6	---	6	7/73	20	---	---	---	---	2139
55	52	7	---	0	10/51	15	---	---	---	---	2140
103	58	6	72;91	60	9/73	15	---	---	---	---	2141
66	56	12	30;56	4	8/66	150	---	---	---	---	2142
54	54	7	---	8	3/60	8	---	---	---	---	2146
123	---	---	---	---	---	---	---	9	450	---	2149
140	21	6	55;130	20	10/73	25	---	---	---	---	2151
27	23	6	25	10	6/65	5	---	---	---	---	2152
108	72	5	---	70	7/71	10	---	---	---	---	2153
90	22	6	---	30	7/73	---	---	---	---	---	2154
83	30	6	---	35	6/73	18	---	---	---	---	2155
64	19	6	30;58	18	5/69	15	.56	---	---	---	2156
59	22	6	---	18	10/73	20	---	---	---	---	2157
68	68	6	---	18	9/62	4	---	---	---	---	2158
37	30	6	---	---	---	2	---	5	---	8.4	2159
111	73	7	86;106	65	9/66	10	---	---	---	---	2168
85	32	6	49;76	32	7/63	15	---	---	---	---	2169
136	104	6	109;130	90	3/69	10	---	---	---	---	2170
85	85	7	---	40	8/62	20	1.6	---	---	---	2174
120	63	6	90	30	9/73	15	---	---	---	---	2175
85	58	7	---	28	2/61	4	---	---	---	---	2176
64	38	6	---	2	5/73	60	---	---	---	---	2177
60	37	6	---	32	11/73	---	---	---	---	---	2178
41	19	6	---	6	8/61	2	---	---	---	---	2179
70	60	6	---	12	6/59	20	1.5	---	---	---	2180
90	33	7	---	30	9/73	10	.12	---	---	---	2181
147	20	6	91;120	62	8/73	20	---	---	---	---	2182
60	60	6	---	---	---	---	---	9	650	---	2184
12	12	2	---	---	---	---	---	---	420	---	2185

TABLE 6.

Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-2186	4141-8029	A. J. 8illy	Urson Shellito	---	H	1038	S	Dco/sh
2190	4142-8013	Harriet Segessmann	Max Hickernell	1961	H	1126	S	Dco/sh
2192	4142-8020	Konstantin Shirkoff	James R. Worley	1958	H	1014	T	Qo/---
2193	4142-8022	John Vance	Max Hickernell	---	H	1162	S	Dco/sh
2194	4142-8023	Helen Gallant	---	---	H	1170	S	Qo/---
2195	4142-8028	Raymond Robison	Max Hickernell	1965	H	1062	S	Dco/sh
2196	4142-8030	G. A. Huffman	---	---	H	1142	S	Qo/---
2197	4143-8007	Lawrence Smith	Raymond L. 8utterfield	1973	H	1300	S	Dco/sh
2198	4143-8008	R. L. Ramey	Max Hickernell	1961	H	1120	T	Oco/sh
2199	4143-8009	Erica Schifflett	Raymond L. 8utterfield	1973	H	1280	S	Qo/---
2200	4143-8009	Greenleaf Corporation	Max Hickernell	---	N	1165	S	Oco/sh
2201	4143-8010	F. L. Pratt	do.	1962	H	1272	S	Qo/sdgv
2202	4143-8011	D. A. Kirkwood	---	1974	H	1270	S	Dco/sh
2203	4143-8012	G. R. Acker	Max Hickernell	1962	H	1200	S	Oco/st
2204	4143-8012	D. J. Acker	do.	1968	H	1205	S	Dco/sh
2205	4143-8015	G. F. Schmalzried	do.	1967	H	1287	S	Mcu/ss
2206	4143-8017	L. O. Priber	do.	1960	H	1304	S	Mcu/ss
2207	4143-8028	R. J. Irons	do.	1968	H	1078	S	Oco/sh
2209	4144-8008	P. D. Knuth	James R. Worley	1958	H	1310	S	Dco/sh
2210	4144-8009	W. D. Hall	Max Hickernell	1965	H	1182	S	Qo/gr
2211	4144-8009	G. D. Jennes	8erkley D. 8ossard	1973	H	1292	S	Qo/gr
2212	4144-8011	L. G. Hites	---	---	H	1252	S	Qo/sdgv
2213	4144-8011	8en 8attles	Walter Kent	1973	H	1255	S	Dco/st
2214	4144-8012	K. R. Carr	Max Hickernell	1965	H	1194	S	Qo/gr
2215	4144-8012	Oavid Newhard	do.	1965	H	1200	S	Dco/sh
2216	4144-8015	Floyd Fladie	do.	1960	H	1332	S	Mcu/ss
2217	4144-8016	Henry Stagler	do.	1964	H	1298	S	Mcu/ss
2218	4144-8016	Duane Weible	Raymond L. 8utterfield	---	H	1310	H	Mbe/st
2219	4144-8020	John McNeilly	Max Hickernell	1968	H	1000	S	Dco/sh
2220	4144-8020	E. C. Oavis	---	1973	H	985	T	Qo/s
2221	4144-8022	J. F. Groves	Moody Drilling Co., Inc.	1965	H	1055	S	Dco/sh
2222	4144-8023	Harry Meadors, Jr.	Max Hickernell	1966	H	1056	S	Oco/sh
2223	4144-8025	T. R. 8rown, Jr.	---	---	H	1164	S	Qt/c
2224	4144-8026	David Miller	Raymond L. 8utterfield	1973	H	1168	S	Dco/sh
2225	4144-8027	F. C. Martin	---	---	H	1108	S	Qt/c
2226	4145-8010	Albert Walker	Max Hickernell	1961	H	1330	S	Dco/sh
2227	4145-8010	C. R. Hamilton	Moody Drilling Co., Inc.	1957	H	1380	S	Mcu/ss
2228	4145-8011	Arthur Hayes	Max Hickernell	1963	H	1357	S	Mo/sh
2229	4145-8011	F. T. 8eck	8oyd Lee Hall	1973	H	1432	S	Mo/sh
2230	4145-8012	Joseph Sonowski	Max Hickernell	1962	H	1215	S	Dco/st
2231	4145-8016	C. E. Scott	do.	1961	H	1192	H	Dco/sh
2232	4145-8017	L. W. Smith	do.	1967	H	1202	S	Dco/sh
2233	4145-8020	J. W. Mc8ride	do.	1966	H	1060	S	Dco/st
2234	4145-8020	C. C. Wehr	do.	1961	H	1062	W	Dco/sh
2235	4145-8020	R. A. Crate	---	1973	H	1172	S	Oco/sh
2236	4145-8023	L. J. Atrozskin	Max Hickernell	1961	H	1050	H	Oco/sh
2237	4145-8027	John Gilchrist	---	---	H	1125	S	Qt/c
2239	4145-8028	John Casbohm	P. E. McGill	---	H	1098	U	Dco/sh
2240	4146-8008	George Lewandowski	---	---	H	1450	H	Mo/sh
2242	4146-8014	C. L. Headrick	Moody Drilling Co., Inc.	1954	H	1112	T	Qo/gr
2243	4146-8018	Lloyd Yochum	Max Hickernell	1973	H	1212	H	Dco/sh
2244	4146-8022	Earl Nicolls	do.	1964	H	950	S	Qo/gr
2245	4146-8026	Joseph Gyulay	do.	1974	H	1100	S	Dco/sh
2246	4147-8012	W. P. Miller	do.	1962	H	1294	S	Dco/st
2247	4147-8017	Nicholes #1	8oyd Lee Hall	1972	U	1130	S	Dco/st
2248	4147-8017	8ean #2	do.	1973	U	1142	S	Dco/st
2249	4147-8018	8ean #1	do.	1972	U	1142	---	Dco/st
2250	4147-8018	Lloyd 8ean	do.	1962	H	1182	S	Oco/sh
2251	4147-8029	Gary Artman	do.	1962	H	1074	S	Oco/sh
2252	4147-8031	E. W. Martin	do.	1965	S	1070	S	Oco/sh
2253	4147-8031	do.	---	---	S	1070	S	Dco/sh
2254	4148-8009	James Tan	8oyd Lee Hall	1972	H	1370	S	Qo/gr
2255	4148-8008	Irene Findlay	Max Hickernell	1966	H	1335	S	Dco/sh
2256	4148-8010	James Tan	8oyd Lee Hall	1972	H	1370	S	Oco/sh
2257	4148-8010	C. K. Moffatt	Max Hickernell	1965	H	1435	S	Mcu/ss
2258	4148-8010	L. R. Rogers	do.	1965	H	1478	S	Mcu/ss
2259	4148-8010	R. M. Gorisik	8oyd Lee Hall	1972	H	1450	H	Mcu/ss
2260	4148-8011	Michael Stefaniak	Max Hickernell	1962	H	1380	S	Mcu/ss
2261	4148-8012	William Stevens	do.	1962	H	1273	S	Oco/sh
2262	4148-8017	J. W. Hotchkiss	do.	---	H	1170	S	Dco/st
2263	4148-8018	Karl Martin, Jr.	do.	1967	H	1193	H	Dco/st
2264	4148-8019	do.	do.	1964	H	1175	S	Dco/sh
2265	4148-8020	A. L. Hickling	---	---	H	1202	H	Dco/---
2266	4148-8021	R. V. Henretty	Max Hickernell	1965	H	1153	S	Qo/sdgv
2268	4148-8030	Earl Stick	P. E. McGill	1972	H	1012	U	Dco/sh
2269	4148-8023	W. J. 8iggie	Max Hickernell	1968	H	938	S	Qo/gr
2270	4148-8025	Delbert Wilder	---	---	H	1010	S	---/---
2271	4148-8027	U. S. Geological Survey	Max Hickernell	1973	U	1005	S	Dct/sh
2272	4148-8028	C. R. Greenfield	---	---	H	998	S	Qt/c
2273	4148-8031	M. Stannis	---	---	H	1022	S	Qt/c
2274	4149-8008	Samuel Malutich	Max Hickernell	1961	H	1282	S	Dco/sh
2275	4149-8019	8&J Forging Co.	do.	1966	N	1188	S	Qo/gr

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
56	34	7	---	8	7/59	4	---	---	---	---	Cw-2186
73	55	6	---	10	7/61	30	---	---	---	---	2190
266	266	6	266	F	8/58	---	---	---	---	---	2192
60	25	6	---	3	6/67	10	---	10	500	---	2193
8	8	36	---	---	---	---	---	12	650	---	2194
32	29	6	31	6	10/65	20	---	---	---	---	2195
22	22	34	---	---	---	---	---	11	550	---	2196
94	20	6	---	20	6/73	7	---	---	---	---	2197
100	28	7	85	20	11/61	3	---	---	---	---	2198
87	87	6	---	37	9/73	12	---	---	---	---	2199
90	66	12	---	---	---	0	---	---	---	---	2200
92	92	7	---	40	8/62	15	1.5	---	---	---	2201
154	125	6	---	54	3/74	16	---	---	---	---	2202
90	23	7	---	52	1962	10	---	---	---	---	2203
77	53	6	---	---	---	20	---	---	---	---	2204
83	15	6	55;76	53	5/67	12	---	---	---	---	2205
85	30	7	---	40	4/60	3	---	---	---	---	2206
38	18	6	---	8	8/68	2	---	---	---	---	2207
298	241	6	---	150	11/58	20	---	---	---	---	2209
116	97	6	94	55	10/65	15	---	---	---	---	2210
150	150	6	---	128	11/73	20	10	---	---	---	2211
87	87	6	---	30	12/60	20	---	---	---	---	2212
157	150	6	---	---	1973	30	---	---	---	---	2213
60	60	6	57	12	10/65	10	---	---	---	---	2214
74	60	7	63	40	7/65	20	---	---	---	---	2215
115	24	7	---	80	5/60	20	---	---	---	---	2216
70	24	7	---	34	6/64	20	---	---	---	---	2217
43	---	---	---	17	---	---	---	7	320	---	2218
132	94	6	---	10	9/68	3	---	---	---	---	2219
170	170	6	---	4	9/73	---	---	---	---	---	2220
90	90	6	80	19	7/65	10	.38	---	---	---	2221
50	42	4	---	12	9/66	3	---	---	---	---	2222
32	32	36	---	---	---	---	---	16	500	---	2223
104	30	6	---	---	---	---	---	---	700	---	2224
21	21	36	---	---	---	---	---	8	500	---	2225
61	12	6	---	---	---	---	---	---	---	---	2226
84	29	6	---	52	3/57	20	---	---	---	---	2227
27	21	12	23	18	9/63	1	---	---	---	---	2228
68	---	---	---	---	---	---	---	---	---	---	2229
125	36	7	28	18	1962	3	---	---	---	---	2230
120	30	7	---	27	9/61	4	---	---	---	---	2231
168	20	7	164	10	10/67	4	---	---	---	---	2232
112	67	6	91;104	70	2/66	10	---	---	---	---	2233
65	16	8	---	7	8/61	7	---	---	---	---	2234
155	151	6	---	40	---	20	---	---	---	---	2235
70	54	7	---	28	11/61	8	---	---	---	---	2236
20	---	30	---	---	---	---	---	12	750	---	2237
50	---	8	---	4	---	---	---	---	1200	---	2239
60	---	---	---	---	---	---	---	11	450	---	2240
157	157	7	---	10	1/54	30	---	---	---	---	2242
66	42	6	43	35	2/73	5	---	---	---	---	2243
63	63	6	---	25	10/64	7	---	---	---	---	2244
45	15	8	17	2	3/74	6	---	13	550	8.3	2245
64	22	7	---	12	9/62	6	---	---	---	---	2246
179	179	9	19;60;107	7	1972	40	1.7	---	---	---	2247
200	200	9	40;65;103	5	8/73	60	6.0	---	---	---	2248
195	195	9	56;105	5	1972	50	3.3	---	---	---	2249
68	40	8	35;60	20	7/62	10	---	---	---	---	2250
70	26	7	---	10	6/62	2	---	---	---	---	2251
50	---	8	---	---	---	---	---	---	1300	---	2252
---	---	---	---	---	---	---	---	---	2100	---	2253
57	57	8	37;57	14	5/72	10	.28	---	---	---	2254
50	32	7	---	2	11/66	6	---	---	---	---	2255
68	29	8	54;67	F	5/72	60	---	---	---	---	2256
72	15	8	---	12	9/65	8	---	---	---	---	2257
101	32	7	---	45	10/65	20	---	---	---	---	2258
80	20	8	60;78	4	6/72	25	2.5	---	---	---	2259
69	16	7	---	15	4/62	10	---	---	---	---	2260
60	40	7	35	10	4/62	5	---	---	---	---	2261
55	34	12	---	5	10/72	3	---	8	600	---	2262
53	30	7	---	16	2/67	10	---	---	---	---	2263
40	38	6	---	3	4/64	30	---	---	---	---	2264
68	---	---	---	---	---	---	---	12	650	---	2265
40	40	6	40	22	6/65	10	---	12	520	---	2266
45	18	6	45	12	8/72	1	---	---	---	---	2268
43	43	7	---	12	7/68	15	---	---	---	---	2269
20	---	---	---	15	---	---	---	7	540	---	2270
155	42	6	---	155	6/73	0.1	---	2	7000	---	2271
22	---	4	---	---	---	---	---	12	850	---	2272
20	20	36	---	---	---	---	---	9	700	---	2273
55	34	8	---	12	8/61	9	---	---	---	---	2274
38	38	8	---	7	6/66	20	---	---	---	---	2275

TABLE 6.

Well location								
Number	Lat-Long	Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Cw-2276	4149-8020	John Stagl	---	---	H	1159	S	---/---
2277	4149-8028	Robert Clark	Moody Drilling Co., Inc.	---	S	1000	S	Dco/sh
2278	4149-8028	Benjamin Gates	Max Hickernell	1968	H	998	S	Dco/st
2279	4149-8028	Paul Medrick	do.	1969	H	994	S	Dco/st
2280	4149-8028	Andrew Fedenets	do.	1968	H	983	U	Dct/st
2281	4149-8031	Rolland McMillin	---	---	H	1000	S	---/---
2282	4149-8031	O. A. Baker	---	---	H	992	H	---/---
2283	4150-8014	J. L. Phillips	Boyd Lee Hall	---	H	1225	S	Dco/sh
2284	4150-8018	Thomas Panko	do.	---	H	1125	S	Dco/sh
2285	4150-8019	C. O. Frawley	---	---	H	1172	S	---/---
2286	4150-8019	John Hepak, Jr.	---	---	H	1151	S	Qt/c
2287	4150-8030	Edward Marcharski	John E. Gage, Jr.	1973	H	973	U	Dct/st
2288	4136-8007	David Shreves	Max Hickernell	1972	H	1398	H	Msh/st
2289	4150-8030	William Kaiser	---	---	H	970	U	Qt/---
2290	4135-8015	George Andrews	Urson Shellito	1953	H	1084	T	Qo/s
2291	4147-8020	J. M. Coblentz	do.	1953	H	1211	S	Dco/st
2292	4144-8024	Steve Petrus	do.	1955	H	1098	S	Qo/gr
2293	4134-8011	R. C. Irwin	do.	1954	H	1130	S	Mcu/ss
2294	4136-8008	High Carrier	do.	1954	H	1175	S	Dco/sh
2295	4138-8022	T. O. Mathers	do.	1954	H	1164	S	Qo/gr
2296	4129-8008	A. H. Welch	Max Hickernell	1961	H	1430	H	Msl/ss
2297	4129-8010	E. C. Dalton	Moody Drilling Co., Inc.	1953	S	1355	S	Msl/ss
2298	4129-8011	V. L. Sanders	Berkley D. Bossard	1967	H	1358	S	Msl/ss
2299	4129-8012	Frank Nader, Sr.	W. G. McDowell	1965	H	1300	S	Mm/ss
2300	4132-8021	C. E. Blue	Urson Shellito	1953	H	1042	S	Mbe/ss
2301	4135-8011	Mildred Vogan	Max Hickernell	1974	H	1100	S	Qo/s
2302	4135-8013	H. O. Rearick	Berkley D. Bossard	1974	H	1160	S	Mbe/st
2303	4135-8018	J. R. Allen	Urson Shellito	1953	H	1110	S	Mbd/sh
2305	4137-8009	Frank Abt	Berkley D. Bossard	1967	H	1210	S	Dco/sh
2306	4137-8010	Chester Leveto	Max Hickernell	1966	H	1135	T	Dco/sh
2307	4137-8011	A. M. Langdon	Urson Shellito	1954	H	1255	S	Mcu/ss
2309	4137-8012	Bra-Vor Tool Co.	Max Hickernell	1974	H	1412	H	Msh/st
2314	4138-8014	Ruth Etter	---	---	H	1290	S	Qo/gr
2315	4138-8019	S. G. Richmond	Urson Shellito	1955	H	1100	S	Qo/gr
2316	4139-8009	Rodney Allen	Max Hickernell	1974	C	1215	S	Dco/sh
2317	4139-8014	G. A. Burns	Urson Shellito	1953	H	1347	S	Mbe/st
2318	4139-8021	J. R. Abercrombie	do.	1953	H	1192	H	Mcu/ss
2319	4139-8022	Howard Stockton	do.	1954	H	1242	S	Qo/gr
2320	4139-8022	Harry Clifford	do.	1959	H	1232	H	Mbe/st
2321	4139-8022	H. L. Wescott	Max Hickernell	1974	H	1231	S	Qo/gr
2322	4139-8022	G. R. Johnston	Urson Shellito	1954	H	1235	S	Mcu/ss
2323	4139-8023	J. F. Gibson	do.	1954	H	1268	S	Mcu/ss
2324	4139-8026	A. W. Levenhagen	do.	1953	H	1152	S	Mcu/ss
2326	4140-8025	J. H. Burlingham	do.	1955	H	1182	S	Mbd/st
2327	4140-8028	Frank Kennedy	do.	1953	H	1040	S	Dco/sh
2328	4141-8009	Richard Brooks	Moody Drilling Co., Inc.	1969	H	1235	S	Qo/sdgv
2329	4141-8022	R. N. Egli	Urson Shellito	1954	H	1202	S	Mcu/ss
2340	4141-8028	Jack Reynolds	do.	1953	H	1102	H	Dco/st
2341	4141-8029	P. E. Hawkins	do.	1954	H	1235	S	Dco/sh
2342	4141-8030	W. F. Love	do.	1955	H	1032	S	Dco/st
2344	4143-8017	J. G. Ransom	Max Hickernell	1960	H	1270	S	Qo/gr
2345	4143-8028	H. T. Giles	Urson Shellito	1954	H	1072	S	Dco/sh
2346	4144-8011	Michael Gualtier	Max Hickernell	1974	H	1230	S	Qo/sdgv
2347	4144-8017	Meno Fisher	Urson Shellito	1953	S	1277	S	Mcu/ss
2348	4144-8019	J. B. Webb, Jr.	Boyd Lee Hall	1971	H	1312	S	Mbe/st
2349	4145-8009	Robert Drda	Max Hickernell	1974	H	1535	S	Msh/sh
2350	4145-8019	M. E. Jamison	Urson Shellito	1953	H	1288	S	Dco/sh
2351	4146-8016	L. W. Smith	Lorenze Lee Hall	1973	H	1132	S	Qo/---
2352	4146-8019	R. P. Shaffer	Max Hickernell	1974	H	1254	H	Dco/sh
2353	4146-8023	G. R. Foltz	Moody Drilling Co., Inc.	1949	H	1010	S	Dco/sh
2354	4147-8026	Paul Haas	Raymond L. Butterfield	1969	H	1088	S	Dco/sh
2355	4150-8029	William Nelson	P. E. McGill	1972	H	982	U	Dct/sh
2356	4137-8012	Westons Shoppers City	Moody Drilling Co., Inc.	1970	C	1396	H	Mcu/ss
2357	4137-8014	Crawford Central Sch. Dist.	do.	1968	T	1328	H	Mcu/ss
2359	4129-8015	P. A. Goodnight	Berkley D. Bossard	1973	H	1220	T	Qo/sdgv
2360	4129-8025	John Danick	R. E. Mohr Well Drilling	1973	H	1280	S	Msl/---
2361	4130-8022	M. L. Walsh	do.	1972	H	1172	S	Msh/sh
2362	4131-8020	East Fallowfield Twp.	do.	1974	H	1160	S	Mcu/ss
2363	4133-8027	P. J. Schriebl	Timothy Copeland	1974	H	1202	S	Msh/st
2364	4134-8018	Patrick Matrogran	Berkley D. Bossard	1974	H	1272	S	Msh/st
2365	4134-8028	J. N. Vassel	R. E. Mohr Well Drilling	1973	H	1114	S	Mcu/ss
2366	4135-8010	Raymond Almgren	Max Hickernell	1974	H	1240	S	Qo/gr
2367	4135-8026	Ted Plucinski	Charles R. Himes	1974	H	1184	S	Mcu/ss
2368	4135-8026	Eugene Diodati	John J. Koren & Sons	1972	H	1130	H	Mcu/ss
2369	4135-8028	F. L. Border	Charles R. Himes	1974	H	1108	S	Mcu/ss
2370	4139-8019	George Noey	Max Hickernell	1973	H	1102	T	Dco/sh
2371	4140-8010	T. W. Shoemaker	do.	1966	H	1162	S	Dco/sh
2372	4140-8028	William Pecnik	do.	1974	H	1050	S	Dco/ss
2373	4141-8018	Robert McGrath	Emerson E. Thompson	1974	H	1300	S	Mbe/ss
2374	4143-8016	J. C. Kearns	Max Hickernell	1974	H	1375	S	Mcu/ss
2375	4143-8017	K. E. Broaddus	Raymond L. Butterfield	---	H	1303	S	Qt/gr

(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hardness (gpg)	Specific conductance (micromhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
41	---	6	---	---	---	---	---	16	900	---	Cw-2276
22	---	4	---	---	---	---	---	---	---	---	2277
24	15	12	---	18	8/68	---	---	---	1050	---	2278
50	26	8	---	10	11/69	1	---	---	---	---	2279
37	---	8	---	5	8/68	1	---	---	---	---	2280
50	---	---	---	9	---	---	---	6	1100	---	2281
20	20	36	---	---	---	---	---	12	700	---	2282
73	42	8	59;70	---	---	20	.67	---	---	---	2283
70	---	---	---	---	---	---	---	9	600	---	2284
40	---	6	---	---	---	---	---	---	450	---	2285
22	22	30	---	---	---	---	---	---	700	---	2286
70	26	8	16;65	15	3/73	3	.07	25	4500	---	2287
76	24	6	60	---	---	---	---	12	420	7.4	2288
18	18	36	---	---	---	---	---	21	1100	---	2289
40	40	7	---	0	---	20	---	---	---	---	2290
70	32	6	32	12	11/53	5	.09	---	---	---	2291
38	38	7	---	14	6/55	10	1.6	---	---	---	2292
55	20	7	---	20	---	16	1.0	---	---	---	2293
70	60	7	---	6	1/54	15	.44	---	---	---	2294
153	153	7	---	85	---	10	.67	---	---	---	2295
110	109	7	---	26	7/61	30	---	---	---	---	2296
22	20	7	---	5	8/53	35	---	---	---	---	2297
33	33	6	21	10	10/67	20	---	---	---	---	2298
88	68	7	---	52	8/65	40	40	---	---	---	2299
58	40	7	---	15	8/53	5	.12	---	---	---	2300
124	124	6	---	38	1/74	5	---	---	---	---	2301
54	28	6	17;47	25	5/74	30	2.0	---	---	---	2302
45	31	7	40	20	5/53	20	---	---	---	---	2303
56	48	6	37	35	7/67	5	.33	---	---	---	2305
80	56	6	62;73;78	40	5/66	9	---	---	---	---	2306
85	30	7	---	15	---	---	.04	---	---	---	2307
108	42	6	62;96	55	5/74	15	.60	---	---	---	2309
49	49	4	---	27	6/61	2	---	---	---	---	2314
67	67	7	---	19	8/55	7	.12	---	---	---	2315
130	31	6	61;121	21	1/74	10	---	---	---	---	2316
115	93	7	---	20	5/53	8	.13	---	---	---	2317
108	60	7	56;75	58	10/53	10	1.4	---	---	---	2318
94	94	7	---	76	6/54	8	2.0	---	---	---	2319
73	33	7	---	0	5/59	15	.83	---	---	---	2320
95	95	6	91	75	2/74	5	---	---	---	---	2321
140	100	7	---	85	8/54	10	.67	---	---	---	2322
178	22	6	---	130	1/54	10	1.0	---	---	---	2323
80	20	7	---	45	8/53	10	.50	---	---	---	2324
45	30	7	---	21	10/55	15	1.7	---	---	---	2326
170	73	7	---	20	9/53	1	.01	---	---	---	2327
62	---	6	---	26	10/69	12	---	---	---	---	2328
90	49	7	---	45	10/54	10	2.0	---	---	---	2329
50	30	7	---	6	5/53	10	.34	---	---	---	2340
100	59	6	---	10	9/54	3	.03	---	---	---	2341
65	50	7	---	25	10/55	7	.12	---	---	---	2342
57	56	8	---	28	7/60	20	---	---	---	---	2344
40	30	7	---	9	12/54	2	.08	---	---	---	2345
94	94	6	90	38	5/74	15	.47	---	---	---	2346
78	30	7	30;60	20	11/53	10	.67	---	---	---	2347
81	24	8	30;76	---	---	22	.55	---	---	---	2348
71	21	6	44	29	1/74	10	---	---	---	---	2349
122	36	7	---	30	11/53	4	.04	---	---	---	2350
52	52	6	13;52	F	7/73	8	---	---	---	---	2351
40	38	6	39	1	3/74	20	---	---	---	---	2352
60	37	7	46	25	7/49	8	.33	---	---	---	2353
55	22	6	23	10	10/69	3	.08	---	---	---	2354
45	---	6	45	8	9/72	1	---	---	---	---	2355
574	40	8	---	18	6/70	110	1.5	---	---	---	2356
368	31	6	---	61	---	45	.44	---	---	---	2357
38	38	6	24	6	7/73	10	10	---	---	---	2359
120	28	6	90	54	11/73	5	.05	---	---	---	2360
70	43	6	65	26	12/72	18	.53	---	---	---	2361
255	30	6	205	82	4/74	35	.38	---	---	---	2362
50	31	6	34	14	3/74	25	1.4	---	---	---	2363
96	23	6	88;92	55	3/74	30	1.1	---	---	---	2364
95	32	6	87	14	2/73	14	.17	---	---	---	2365
76	76	6	76	44	6/74	7	.50	---	---	---	2366
177	35	6	160	130	4/74	20	1.0	---	---	---	2367
110	36	6	22;100	63	5/72	30	1.9	---	---	---	2368
72	30	6	60;65	36	4/74	25	2.5	---	---	---	2369
62	62	6	56	7	12/73	8	---	---	---	---	2370
98	---	6	60;84	40	4/66	7	---	---	---	---	2371
59	18	6	24;38	8	6/74	30	1.8	---	---	---	2372
115	15	6	12;108	---	---	18	---	---	---	---	2373
200	62	6	160	140	6/74	20	1.0	---	---	---	2374
28	28	6	28	5	---	5	.33	---	---	---	2375

TABLE 6.

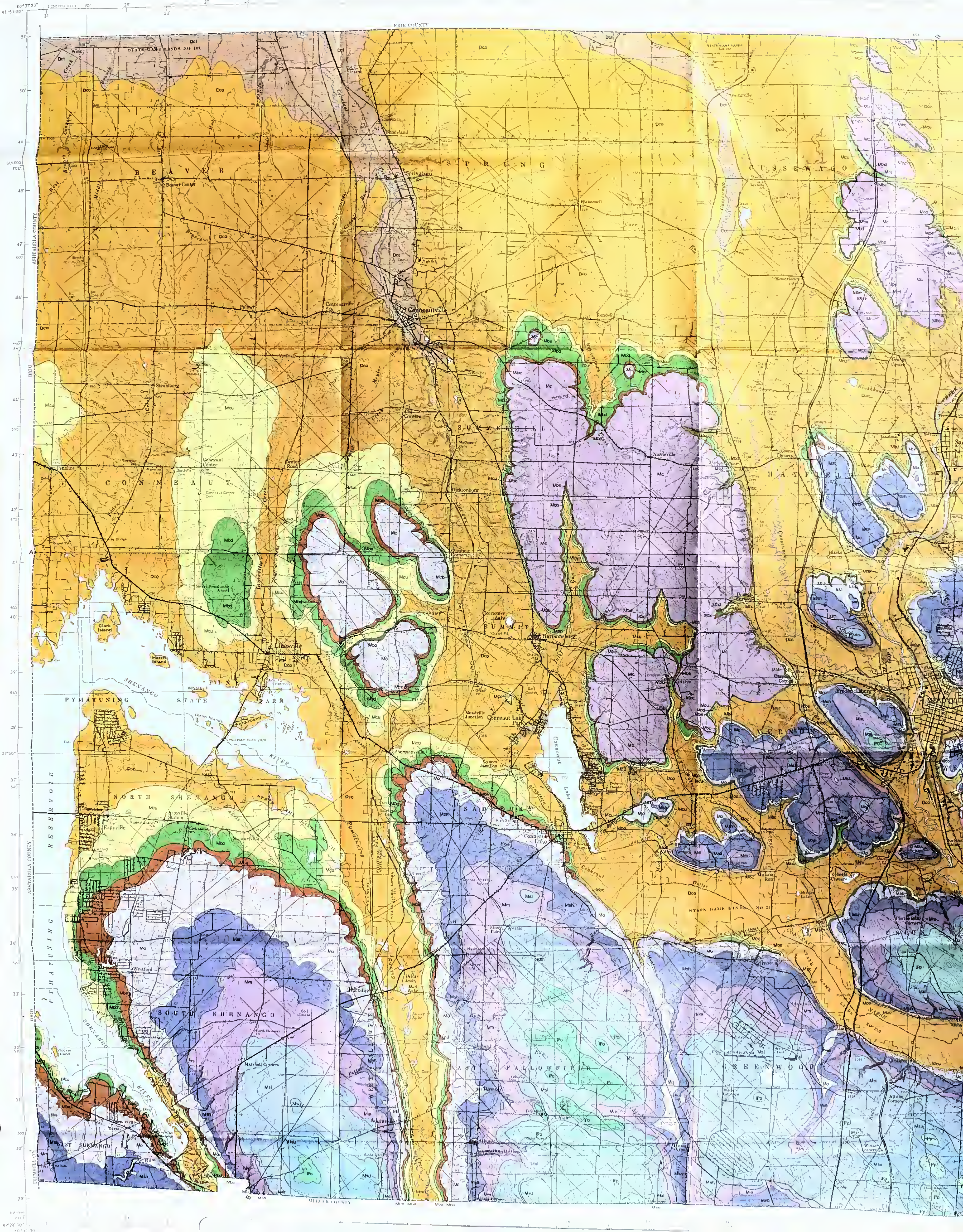
Well location		Owner	Driller	Date completed	Use	Altitude of land surface (feet)	Topographic setting	Aquifer/ lithology
Number	Lat-Long							
Cw-2376	4143-8017	D. E. Shilling	Max Hickernell	1973	H	1282	S	Mcu/ss
2377	4145-8009	Keith Boyd	do.	1974	H	1342	S	Dco/sh
2378	4146-8011	J. E. Bernoski	Lorenze Lee Hall	1973	H	1265	S	Dco/sh
2379	4146-8017	Lawrence Welcheck	Boyd Lee Hall	1973	H	1184	S	Dco/sh
2380	4146-8017	R. J. Welcheck	do.	1973	H	1190	S	Dco/sh
2381	4146-8024	J. F. Post	Lorenze Lee Hall	1973	H	1069	S	Dco/sh
2382	4146-8022	S. G. Sowry	Berkley D. Bossard	1974	H	950	S	Qo/gr
2383	4147-8011	E. C. Rodeman	Max Hickernell	1974	H	1383	H	Dco/sh
2384	4147-8012	L. R. Metzger	do.	1974	H	1300	S	Dco/sh
2385	4147-8021	V. G. Adkins	Berkley D. Bossard	1974	H	1030	S	Qt/gr
2386	4148-8010	M. J. Moreno	Lorenze Lee Hall	1973	H	1485	H	Mo/sh
2387	4148-8012	J. W. VanMeter	do.	1973	H	1250	S	Dco/sh
2388	4149-8016	G. A. Whitman	do.	1973	H	1188	S	Dco/sh
2389	4150-8015	Archie Moses	Boyd Lee Hall	1973	H	1170	S	Dco/sh
2390	4150-8024	D. L. Loepp	John E. Gage, Jr.	1974	H	880	S	Qt/sdgv
2391	4136-8016	John Hamilton	Max Hickernell	1974	H	1174	S	Mcu/ss
2392	4142-8008	Bor. of Saegertown	Moody Drilling Co., Inc.	1974	P	1120	T	Qo/sdgv
2394	4139-8015	A. F. Kondik	Max Hickernell	1974	H	1275	S	Mcu/ss
2395	4140-8015	Maynard Peterson	do.	1974	H	1420	S	Qo/gr
2396	4140-8015	James Stewart	do.	1974	H	1430	S	Qo/gr
2397	4148-8009	A. Yurcak, Jr.	do.	1974	H	1402	S	Dco/st
2398	4145-8010	V. R. Blauser	do.	1974	H	1300	S	Dco/sh
2399	4147-8007	Lester Sherred	Lorenze Lee Hall	1974	H	1182	T	Qo/gr
2400	4146-8008	K. D. Shelhamer	Max Hickernell	1968	H	1498	H	Mcu/ss
2401	4144-8028	D. R. Jablonski	Berkley D. Bossard	---	H	1085	S	Dco/sh
2402	4136-8011	William Lemish	Max Hickernell	1973	H	1338	S	Msh/st
2403	4134-8008	Darrel Ernst	do.	1974	H	1402	S	Mm/st
2404	4130-8012	Frank Bitenc	Virgil C. Palmer	1961	H	1338	S	Mm/sh
2406	4142-8019	O. A. Jones, Jr.	Max Hickernell	1974	H	[illegible]	S	Mbe/ss
2407	4132-8011	Bryce McMichael	Berkley D. Bossard	1975	H	1200	S	Qo/gr

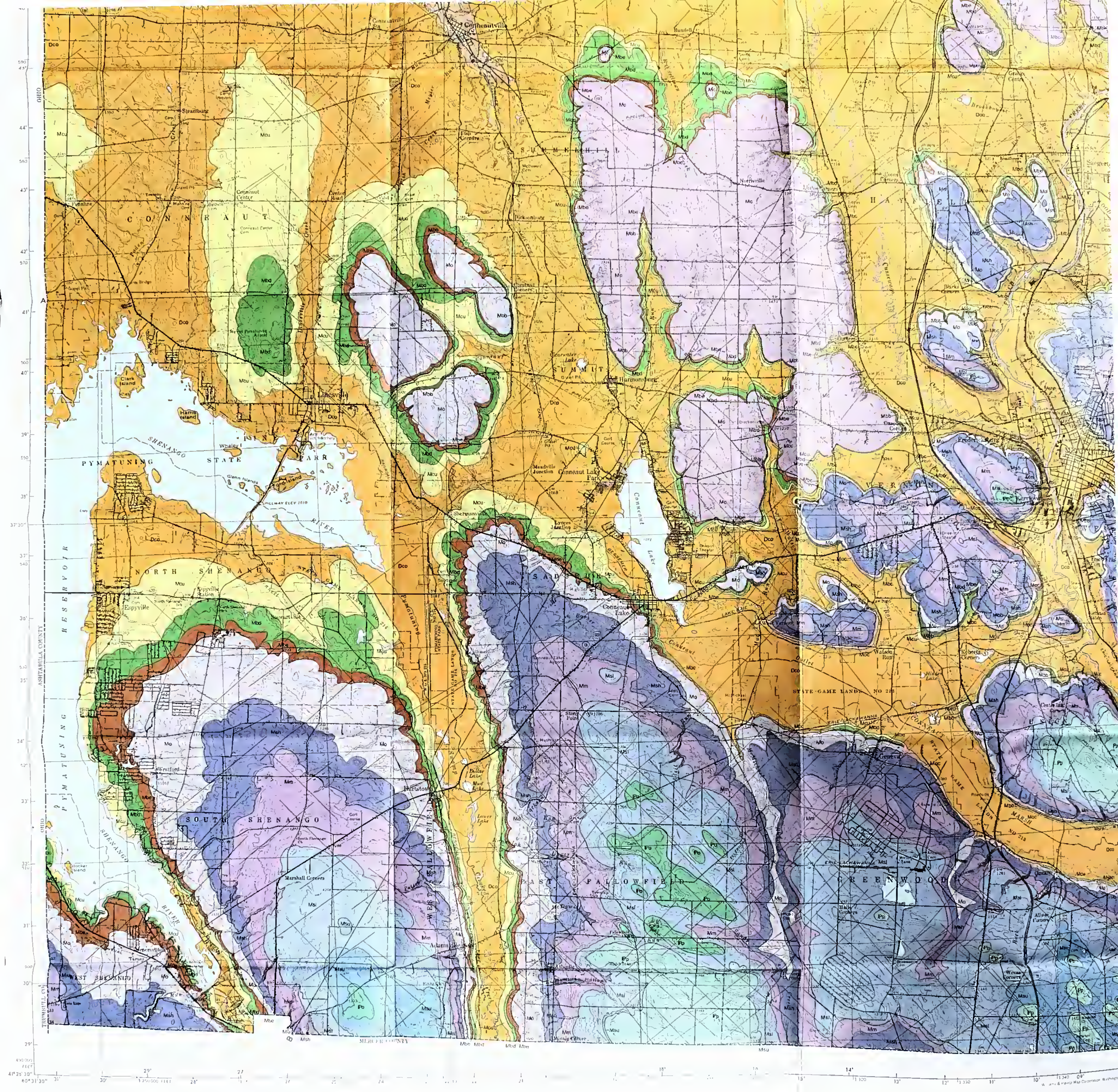
(CONTINUED)

Total depth below land surface (feet)	Casing		Depth(s) to water-bearing-zone(s) (feet)	Static water level		Reported yield (gpm)	Specific capacity (gpm/ft)	Hard-ness (gpg)	Specific conduc-tance (micro-mhos at 25°C)	pH	Well number
	Depth (feet)	Diameter (inches)		Depth below land surface (feet)	Date measured (mo/yr)						
88	46	6	68	16	11/73	20	---	---	---	---	Cw-2376
89	34	6	42;68	18	6/74	20	.59	---	---	---	2377
48	24	8	22;39	0	10/73	46	3.1	---	---	---	2378
64	26	8	56	15	11/73	5	.11	---	---	---	2379
72	24	8	31;67	15	11/73	15	.33	---	---	---	2380
51	18	6	18;46	10	10/73	26	.87	---	---	---	2381
83	83	6	66	29	7/74	20	10	---	---	---	2382
88	53	6	53;72	25	5/74	6	.12	---	---	---	2383
73	22	6	38;64	26	5/74	6	.16	---	---	---	2384
75	55	6	54	48	7/74	6	.78	---	---	---	2385
72	---	8	53	20	8/73	35	.83	---	---	---	2386
67	48	8	40;59	3	7/73	19	.43	---	---	---	2387
62	---	8	33;56	11	8/73	23	.53	---	---	---	2388
43	27	10	29	10	8/73	4	.12	---	---	---	2389
35	35	8	12;27	8	2/74	15	1.1	---	---	---	2390
81	25	6	50;63;75	14	10/74	20	.77	---	---	---	2391
67	38	4	---	---	---	---	---	---	---	---	2392
155	70	6	96;144	40	8/74	3	---	---	---	---	2394
53	53	6	49	8	10/74	10	---	---	---	---	2395
54	54	6	53	16	9/74	10	---	---	---	---	2396
66	27	6	42;61	25	7/74	20	1.3	---	---	---	2397
60	29	6	43;56	14	10/74	10	---	---	---	---	2398
60	60	6	60	12	1974	5	.12	---	---	---	2399
138	---	6	---	70	10/68	12	---	---	---	---	2400
34	29	6	13	---	---	10	---	---	---	---	2401
95	80	6	84	40	12/73	15	---	---	---	---	2402
60	31	6	33;54	5	12/74	40	2.0	---	---	---	2403
150	132	7	---	40	1/61	20	---	---	---	---	2404
118	26	6	108	62	7/74	10	---	---	---	---	2406
118	118	6	52;113	32	7/75	20	.90	---	---	---	2407

TOPOGRAPHIC AND GEOLOGIC SURVEY

Arthur A. Socolow, *State Geologist*





Base map from U.S. Geological Survey Crawford County 1:50,000 topographic map, 1973.

Geology by G. R. Sch

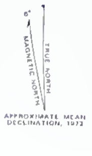
Albert E. VanOlden, C

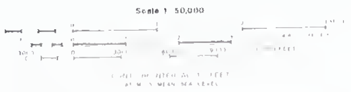
GEOLOGIC AND WATER AVAILABILITY MAP
OF
WESTERN CRAWFORD COUNTY, PENNSYLVANIA

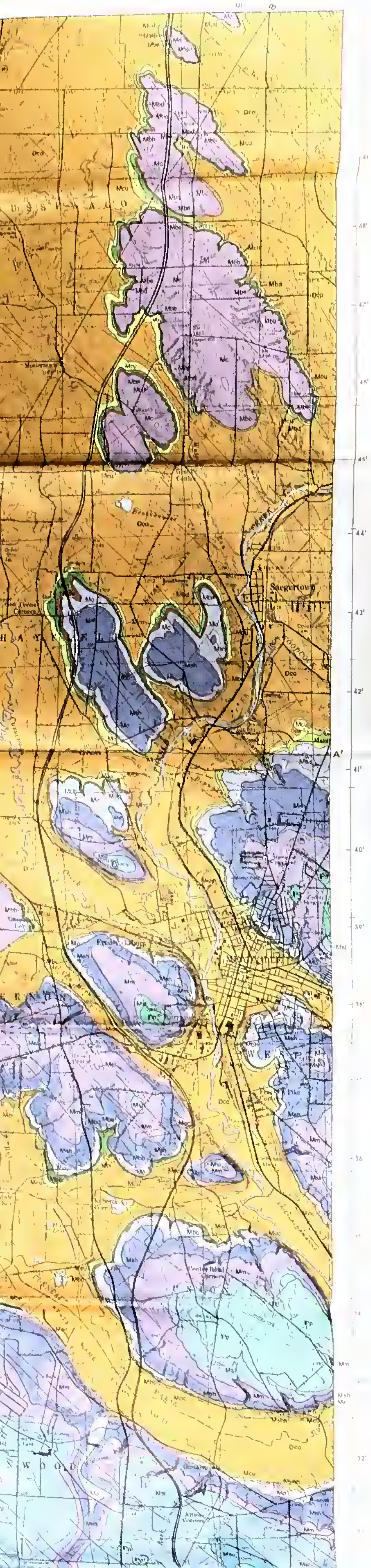
BY

GEORGE R. SCHINER AND JOHN T. GALLAHER

1979







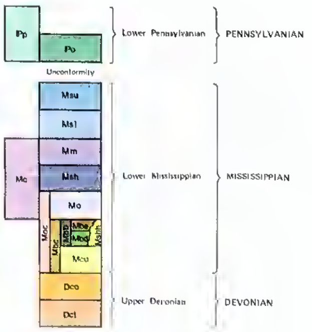
EXPLANATION

	GEOLOGIC UNIT*	THICKNESS (FEET)	DESCRIPTION OF STRATA	EXTENT	WATER-BEARING PROPERTIES	QUALITY OF WATER
PENNSYLVANIAN	POTTSVILLE GROUP Pp	0-100	Sandstone, shale, some conglomerate; may contain thin coal beds; the sandstone commonly has few fracture zones.	Present only in the high uplands in the southern part of the area.	Probably not an aquifer.	Water reported to be very high in iron.
	OLEAN FORMATION Po	0-50	Sandstone, some shale and conglomerate; may contain thin coal beds. Commonly forms knobs on the topography.	Present only in the higher parts of the uplands in the southern part of the area. Mapped with the Pottsville Group where not distinctive.	Generally a good aquifer; poor aquifer where thin and partly saturated. Few wells are completed in this unit. All of the wells yield more than 3 gpm; about half of the wells yield more than 25 gpm.	Water reported to be high in iron in most places.
MISSISSIPPIAN	SHENANGO FORMATION UPPER MEMBER Msu	0-50	Shale, some siltstone.	Present mostly in the high uplands along the southern border of the area.	Probably not an aquifer.	Probably poor.
	SHENANGO FORMATION LOWER MEMBER Msl	0-110	Sandstone, thick to thin, and shale.	Present only in the high uplands in the southern part of the area.	Generally a good aquifer. Only one well yields less than 3 gpm; about one third of the wells yield more than 25 gpm; about one tenth yield more than 50 gpm; no wells yield more than 70 gpm.	Generally good; locally may be very hard or high in iron.
	CUYAHOGA GROUP Mc	0-240	Shale and siltstone, some sandstone. Mapped as the Cuyahoga Group where the individual formations cannot be separated.	Present in the uplands in all but the northwestern part of the area.	Not determined, but the top of the unit probably has somewhat the same characteristics as the Meadville Shale, the middle of the unit has the characteristics of the Sharpsville Sandstone, and the bottom of the unit has the characteristics of the Orangeville Shale.	Water generally hard to very hard; iron content varies widely and may be locally excessive. May be salty in the lower part of the unit in the southeastern part of the area.
	MEADVILLE SHALE Mm	0-90	Shale, some siltstone and sandstone; locally contains a thin limestone.	Present only in the uplands in the southern half of the area. Mapped with the Cuyahoga Group in the central part of the area.	Generally a poor aquifer. Few wells are completed in this unit. All of the wells yield more than 3 gpm; about one third of the wells yield more than 25 gpm; no wells yield more than 50 gpm.	Water only moderately hard; often is excessively high in iron.
	SHARPSVILLE SANDSTONE Msh	0-90	Sandstone, siltstone, and shale; locally contains thin limestones at the top or near the bottom. The best development of the sandstone and siltstone is in the southern part of the area.	Present in the uplands in all but the northwestern part of the area. Mapped with the Cuyahoga Group in the northern part.	Second-best bedrock aquifer. Only about one tenth of the wells yield less than 3 gpm; about one quarter yield more than 25 gpm; about one twentieth yield more than 50 gpm; two wells yield 100 gpm or more (these yields are 100 gpm and 120 gpm).	Good; generally soft to moderately hard and low in iron.
	ORANGEVILLE SHALE THROUGH CUSSEWAGO SANDSTONE, UNDIVIDED** Moc ORANGEVILLE SHALE Mo	0-110	Shale, some siltstone; contains the Bartholomew Siltstone Member near or at the bottom.	Present in the uplands in all but the northwestern part of the area. Mapped with the Cuyahoga Group in the northern part.	Generally a poor aquifer. Few wells are completed in this unit. About one quarter of the wells yield less than 3 gpm; only one well yields more than 25 gpm (a yield of 35 gpm).	Water moderately hard to hard; generally high in iron.
	SHELLHAMMER HOLLOW FORMATION Mshh	0-5	Shale and siltstone.	Present only along the east-central border and in the southeastern part of the area.	Probably not an aquifer.	Probably poor.
	BEREA SANDSTONE THROUGH CUSSEWAGO SANDSTONE, UNDIVIDED Mbc BEREA SANDSTONE AND BEDFORD SHALE, UNDIVIDED Mbb BEREA SANDSTONE Mbe	0-30	Mostly sandstone and siltstone in the western part of the area and siltstone and shale in the eastern part. Grades into the Shellhammer Hollow Formation. Contains gas in the vicinity of Atlantic.	Present in the uplands in all but the northwestern part of the area. Absent where the Shellhammer Hollow Formation is present.	Generally a good aquifer; poor aquifer where thin. All of the wells yield more than 3 gpm; about one fifth yield more than 25 gpm; only two wells yield more than 50 gpm (both yield 60 gpm).	Water hard to very hard; iron content ranges widely and is often excessive.
	BEDFORD SHALE Mbd	0-40	Shale, some siltstone.	Present in the uplands in all but the northwestern part of the area. Absent in the east-central part and in the southeastern corner, where the Shellhammer Hollow Formation rests on the Cussewago Sandstone.	Generally a poor aquifer. Few wells are completed in this unit. All of the wells yield more than 3 gpm; two wells yield more than 25 gpm (these yields are 30 gpm and 45 gpm).	Water generally hard and high in iron.
	CUSSEWAGO SANDSTONE Mcu	0-80	Mostly a porous sandstone; shaly in places along the southeastern shore of Pymatuning Reservoir; locally contains pebbles and some shale beds; cemented in places where thin in the southeastern part of the area. Often called "the white sand" by drillers.	Present in the uplands in all but the northwestern part of the area.	Best bedrock aquifer; poor aquifer where thin and cemented. Only a few wells yield less than 3 gpm; about one quarter yield more than 25 gpm; about one tenth yield more than 50 gpm; two wells yield more than 100 gpm (these yields are 110 gpm and 130 gpm).	Good; generally soft to moderately hard and low in iron. Quality is more consistent than that from other aquifers, especially in the southern part of the area, where the formation is more than 200 feet deep and the water is soft.
DEVONIAN	CONEWANGO GROUP Dco	0-420	Shale, some siltstone; contains LeBoeuf Sandstone Member of Cattaraugus Formation at base, which is a siltstone and sandstone unit as much as 40 feet thick; locally contains oil and gas; may have thin siltstone and sandstone near or at the top.	Present in all of the area except in Conneaut Creek and Cussewago Creek valleys in the north. Except in several upland areas, it forms the bedrock surface in most of the northern half of the area.	Generally a poor aquifer; many wells are unsuccessful. About one fifth of the wells yield less than 3 gpm; only about one twentieth yield more than 25 gpm; six yield more than 50 gpm (these yields are each 60 gpm).	Water generally hard but satisfactory to depths of about 50 feet, though iron content may be excessive. Becomes increasingly salty with depth, so that water is not usable.
	CONNEAUT GROUP Dct	Unknown; may be as much as 650 feet thick.	Shale, some siltstone.	Present at depth everywhere in the area.	Generally a poor aquifer; many wells are unsuccessful. Few wells are completed in this unit. About half of the wells yield less than 3 gpm; only one well yields 25 gpm.	

*See correlation diagram below for stratigraphic relationships among units.

**Unit does not include Shellhammer Hollow Formation.

CORRELATION OF MAP UNITS



SYMBOLS

Contact

Includes gradational and approximately located contacts.

Fracture trace

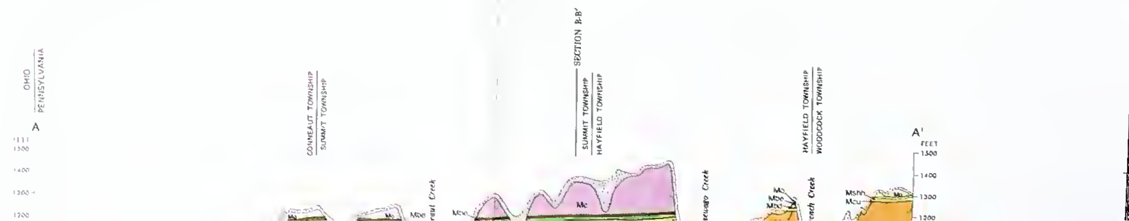
Not field checked.

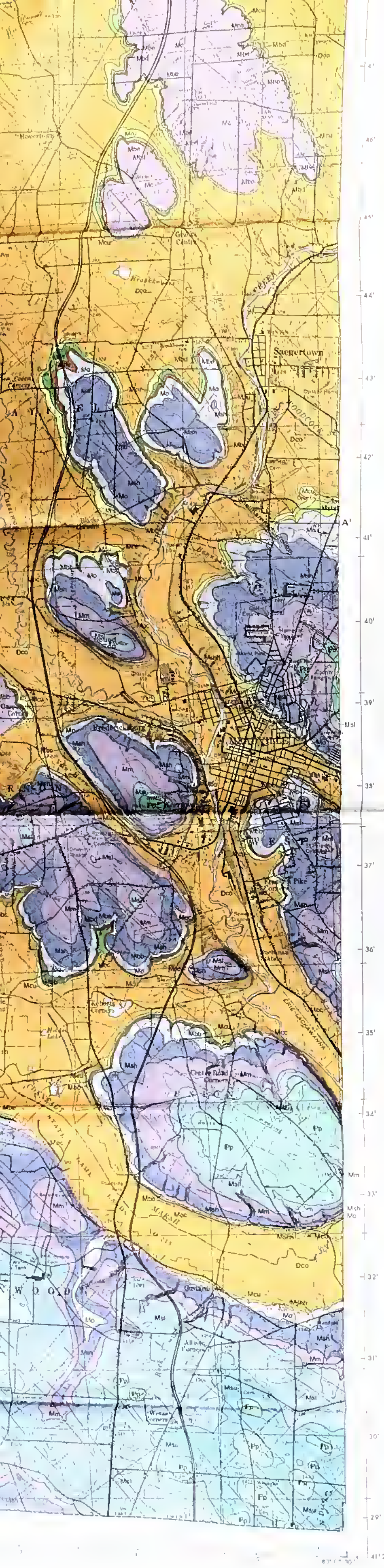
Line of geologic cross section

CROSS SECTIONS

SCALE OF CROSS SECTIONS
1:100,000

VERTICAL EXAGGERATION X76
DATUM IS MEAN SEA LEVEL



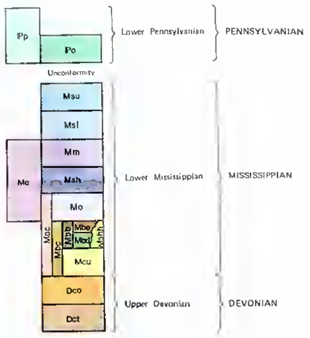


MISSISSIPPIAN		**MEADVILLE SHALE** Mm	0-90	Shale, some siltstone and sandstone; locally contains a thin limestone.	Present only in the uplands in the southern half of the area. Mapped with the Cuyahoga Group in the central part of the area.	Generally a poor aquifer. Few wells are completed in this unit. All of the wells yield more than 3 gpm; about one third of the wells yield more than 25 gpm; no wells yield more than 50 gpm.	Water only moderately hard; often is excessively high in iron.
		SHARPSVILLE SANDSTONE Msh	0-90	Sandstone, siltstone, and shale; locally contains thin limestones at the top or near the bottom. The best development of the sandstone and siltstone is in the southern part of the area.	Present in the uplands in all but the northwestern part of the area. Mapped with the Cuyahoga Group in the northern part.	Second-best bedrock aquifer. Only about one tenth of the wells yield less than 3 gpm; about one quarter yield more than 25 gpm; about one twentieth yield more than 50 gpm; two wells yield 100 gpm or more (these yields are 100 gpm and 120 gpm).	Good; generally soft to moderately hard and low in iron.
	ORANGEVILLE SHALE THROUGH CUSSEWAGO SANDSTONE, UNDIVIDED** Moc	**ORANGEVILLE SHALE** Mo	0-110	Shale, some siltstone; contains the Bartholomew Siltstone Member near or at the bottom.	Present in the uplands in all but the northwestern part of the area. Mapped with the Cuyahoga Group in the northern part.	Generally a poor aquifer. Few wells are completed in this unit. About one quarter of the wells yield less than 3 gpm; only one well yields more than 25 gpm (a yield of 35 gpm).	Water moderately hard to hard; generally high in iron.
		SHELLHAMMER HOLLOW FORMATION Mshh	0-5	Shale and siltstone.	Present only along the east-central border and in the southeastern part of the area.	Probably not an aquifer.	Probably poor.
	BEREA SANDSTONE THROUGH CUSSEWAGO SANDSTONE UNDIVIDED Mbc; BEREA SANDSTONE AND BEDFORD SHALE, UNDIVIDED Mbb	**BEREA SANDSTONE** Mbe	0-30	Mostly sandstone and siltstone in the western part of the area and siltstone and shale in the eastern part. Grades into the Shellhammer Hollow Formation. Contains gas in the vicinity of Atlantic	Present in the uplands in all but the northwestern part of the area. Absent where the Shellhammer Hollow Formation is present.	Generally a good aquifer; poor aquifer where thin. All of the wells yield more than 3 gpm; about one fifth yield more than 25 gpm; only two wells yield more than 50 gpm (both yield 60 gpm).	Water hard to very hard; iron content ranges widely and is often excessive.
		BEDFORD SHALE Mbd	0-40	Shale, some siltstone.	Present in the uplands in all but the northwestern part of the area. Absent in the east-central part and in the southeastern corner, where the Shellhammer Hollow Formation rests on the Cussewago Sandstone.	Generally a poor aquifer. Few wells are completed in this unit. All of the wells yield more than 3 gpm; two wells yield more than 25 gpm (these yields are 30 gpm and 45 gpm).	Water generally hard and high in iron.
		CUSSEWAGO SANDSTONE Mcu	0-80	Mostly a porous sandstone; shaly in places along the southeastern shore of Pymatuning Reservoir; locally contains pebbles and some shale beds; cemented in places where thin in the southeastern part of the area. Often called "the white sand" by drillers.	Present in the uplands in all but the northwestern part of the area.	Best bedrock aquifer; poor aquifer where thin and cemented. Only a few wells yield less than 3 gpm; about one quarter yield more than 25 gpm; about one tenth yield more than 50 gpm; two wells yield more than 100 gpm (these yields are 110 gpm and 130 gpm).	Good; generally soft to moderately hard and low in iron. Quality is more consistent than that from other aquifers, especially in the southern part of the area, where the formation is more than 200 feet deep and the water is soft.
DEVONIAN		**CONEWANGO GROUP** Dco	0-420	Shale, some siltstone; contains LeBoeuf Sandstone Member of Cattaraugus Formation at base, which is a siltstone and sandstone unit as much as 40 feet thick; locally contains oil and gas; may have thin siltstone and sandstone near or at the top.	Present in all of the area except in Conneaut Creek and Cussewago Creek valleys in the north. Except in several upland areas, it forms the bedrock surface in most of the northern half of the area.	Generally a poor aquifer; many wells are unsuccessful. About one fifth of the wells yield less than 3 gpm; only about one twentieth yield more than 25 gpm; six yield more than 50 gpm (these yields are each 60 gpm).	Water generally hard but satisfactory to depths of about 50 feet, though iron content may be excessive. Becomes increasingly salty with depth, so that water is not usable.
		CONNEAUT GROUP Dct	Unknown; may be as much as 650 feet thick.	Shale, some siltstone.	Present at depth everywhere in the area.	Generally a poor aquifer; many wells are unsuccessful. Few wells are completed in this unit. About half of the wells yield less than 3 gpm; only one well yields 25 gpm.	

*See correlation diagram below for stratigraphic relationships among units

**Unit does not include Shellhammer Hollow Formation.

CORRELATION OF MAP UNITS



SYMBOLS

Contact

Includes gradational and approximately located contacts.

Fracture trace

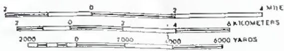
Not field checked.

A——A'

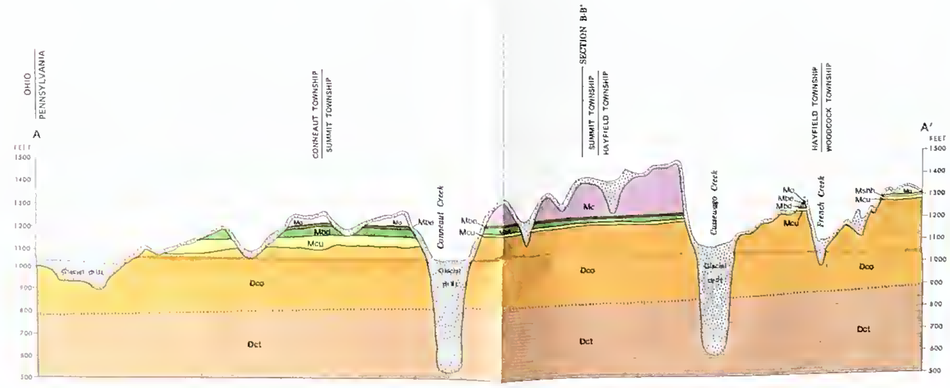
Line of geologic cross section

CROSS SECTIONS

SCALE OF CROSS SECTIONS
1:100,000

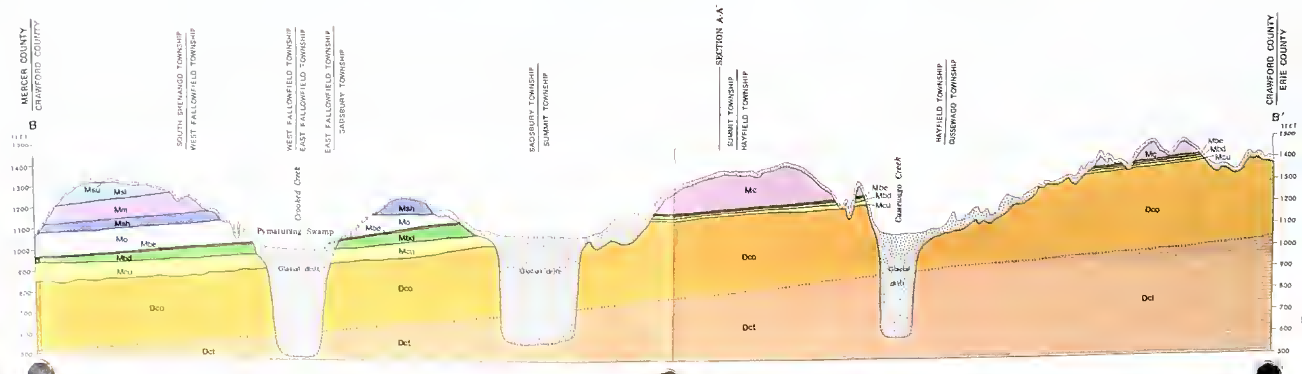


VERTICAL EXAGGERATION X28
DATUM IS MEAN SEA LEVEL



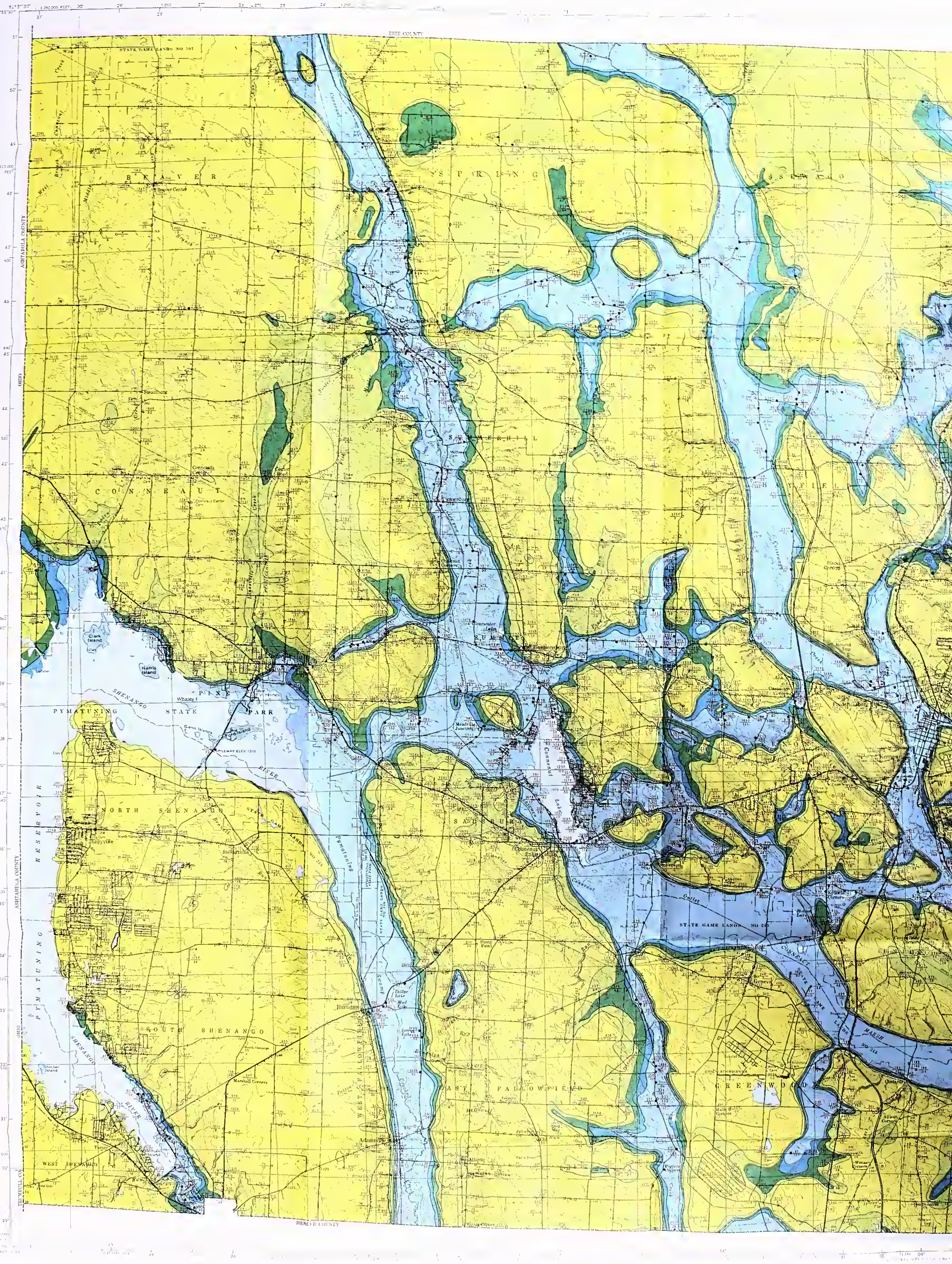
Geology by G. R. Schiner, 1976

Albert E. VanOlden, Cartographer



TOPOGRAPHIC AND GEOLOGIC SURVEY
Arthur A. Socolow, State Geologist

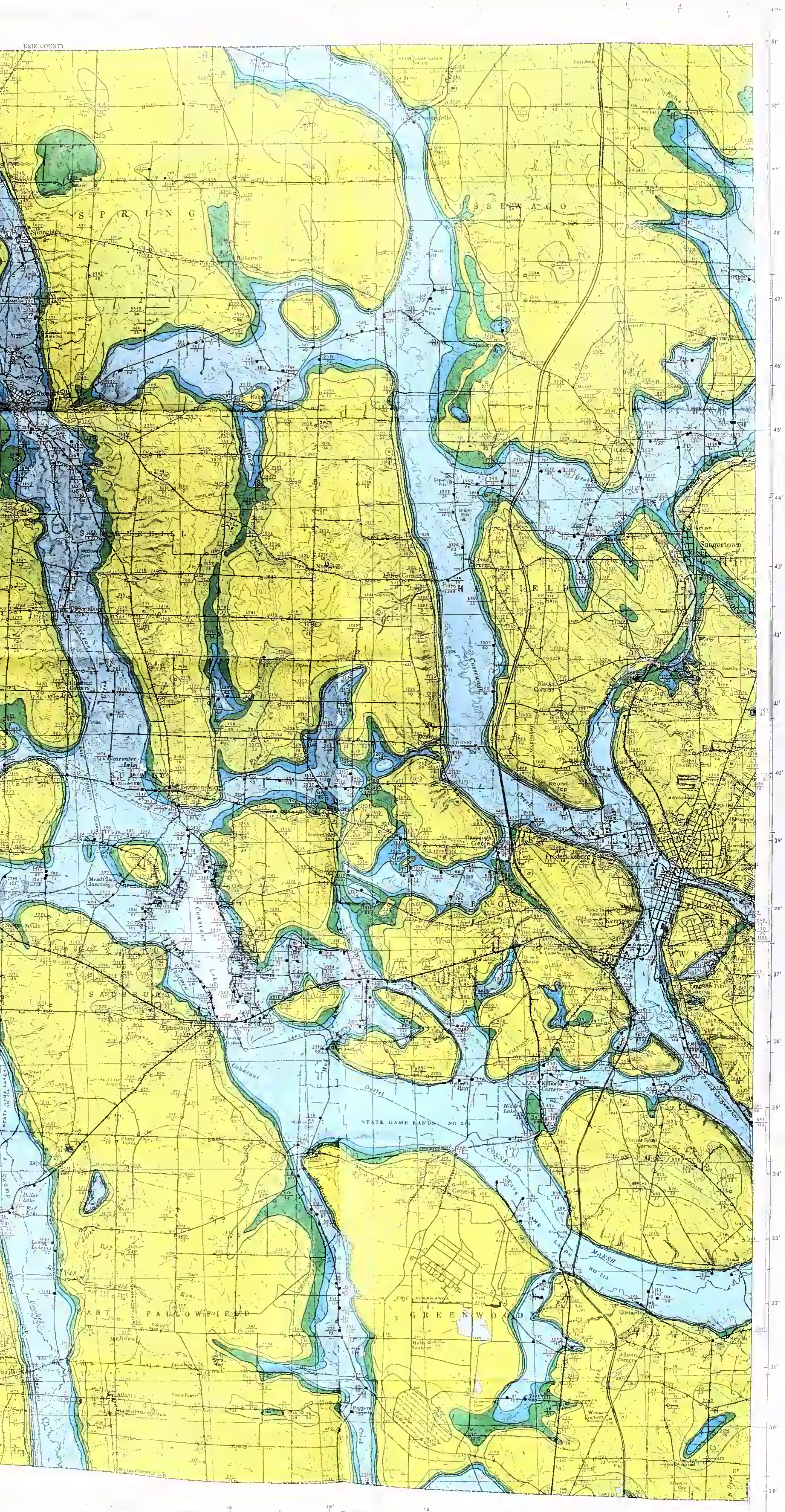
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES



Base map from U.S. Geological Survey Crawford County 1:50,000 topographic map, 1974.

Geology by G. R. Schiner and J. T. Galla
Geary L. Sarno and Albert E. VanOlden,

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES



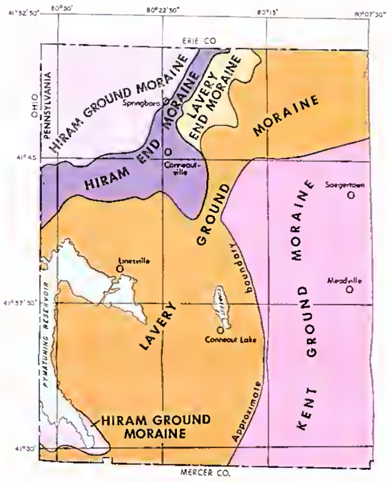
Geology by G. R. Schiner and J. T. Gallaher, 1978.
Geary L. Sarno and Albert E. VanOlden, Cartographers

EXPLANATION

	THICKNESS OF GLACIAL DEPOSITS, IN FEET Includes recent alluvium in stream valleys. The maximum thickness is about 500 feet.		WATER-BEARING CHARACTER OF GLACIAL DEPOSITS Till generally covers the uplands; outwash is found in small valleys and on flanks of valleys; central parts of major valleys are generally filled with silt and clay. Iron concentrations range widely and are excessive in many areas.
TILL 🟨	0-25	LOW YIELDS	Till is generally a poor aquifer. One fifth of the wells yield less than 3 gpm; two thirds yield less than 10 gpm; the highest reported yield is 20 gpm.
TILL / OUTWASH 🟨	25-50	HIGH YIELDS	Outwash is the highest yielding aquifer. Only a few wells yield less than 3 gpm; one fifth yield more than 25 gpm; one tenth yield more than 50 gpm; 13 wells are reported to yield at least 700 gpm; the highest reported yield is 2,050 gpm.
OUTWASH 🟩	50-75		
OUTWASH 🟦	75-100		
OUTWASH ▢	>100		

SYMBOLS

○ $\frac{18.5}{9}$	Well finished in bedrock	Upper number identifies well. Lower number is depth to bedrock or depth of well finished in glacial drift, in feet below land surface.
● $\frac{2249}{60}$	Well finished in glacial drift	



Geology from White and others (1969).

DISTRIBUTION OF GLACIAL DRIFT

MAP SHOWING THICKNESS OF GLACIAL DEPOSITS AND LOCATIONS OF WELLS IN WESTERN CRAWFORD COUNTY, PENNSYLVANIA

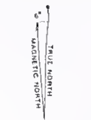
BY

GEORGE R. SCHINER AND JOHN T. GALLAHER

1979

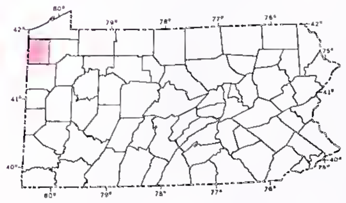
Scale 1:50,000

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL



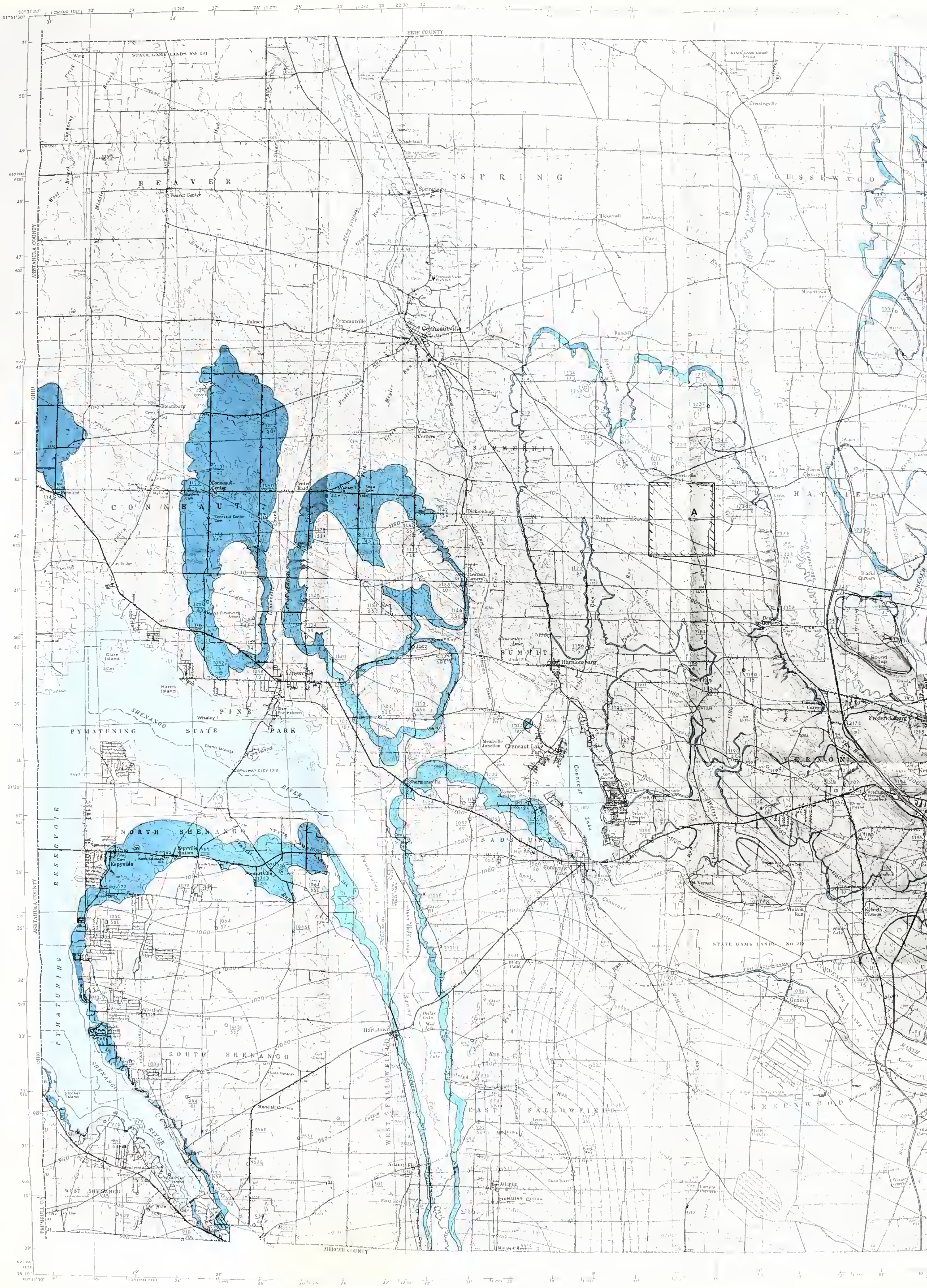
APPROXIMATE MEAN DECLINATION, 1973

LOCATION OF AREA



TOPOGRAPHIC AND GEOLOGIC SURVEY
Arthur A. Socolow, *State Geologist*

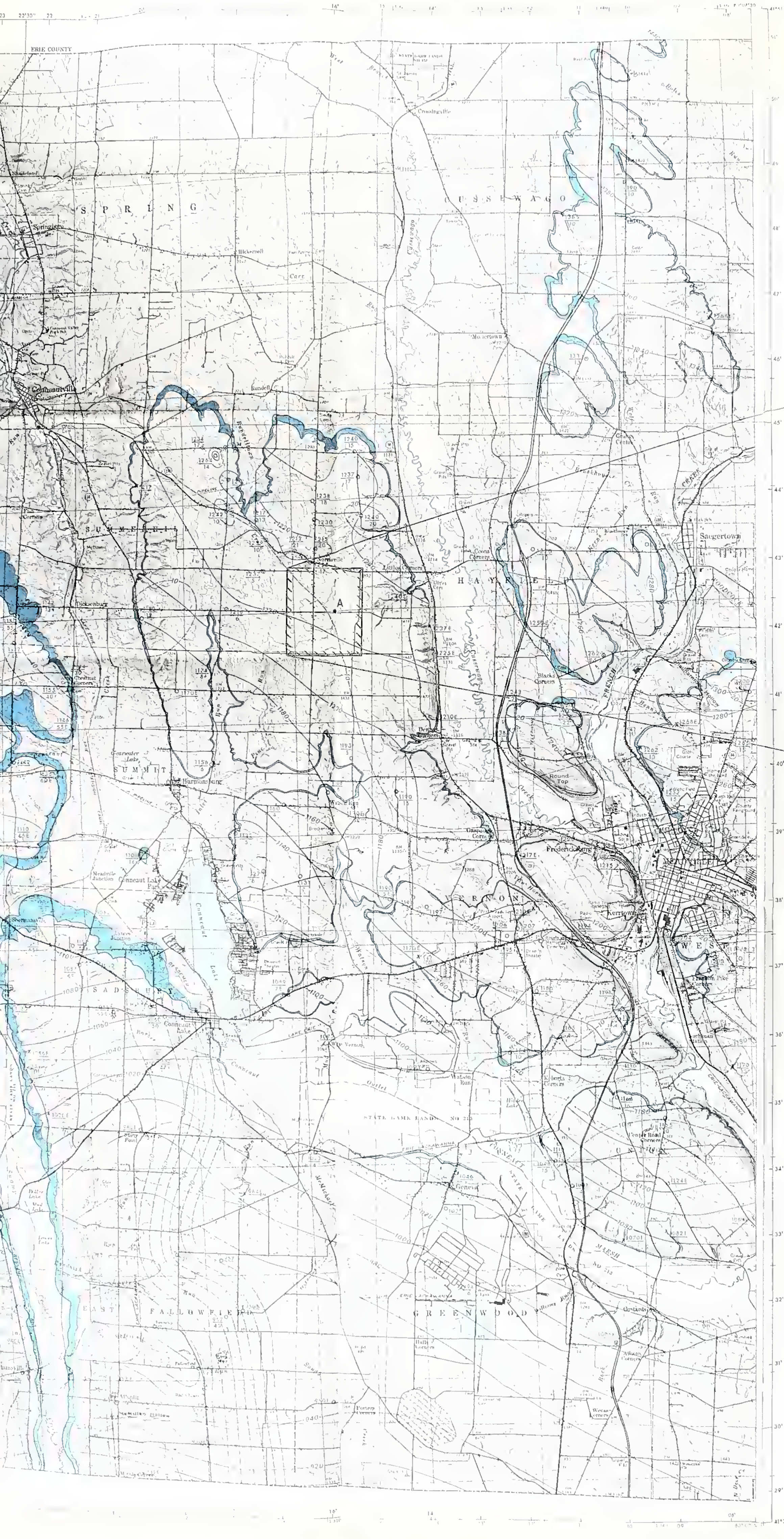
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES



Base map from U.S. Geological Survey Crawford County 1:50,000 topographic map, 1973.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

W 46, Plate 3



EXPLANATION

Area of outcrop of Cussewago Sandstone
Covered by glacial drift in most places.

1040

Structure contour
Approximately located. Shows altitude of top of Cussewago Sandstone. Not shown in area of outcrop because of erosional inconsistencies. Contour interval 10 feet. Datum is mean sea level.

20

Line of equal thickness of Cussewago Sandstone
Approximately located. Not shown in area of outcrop because of erosional inconsistencies. Interval 10 feet.

Outcrop

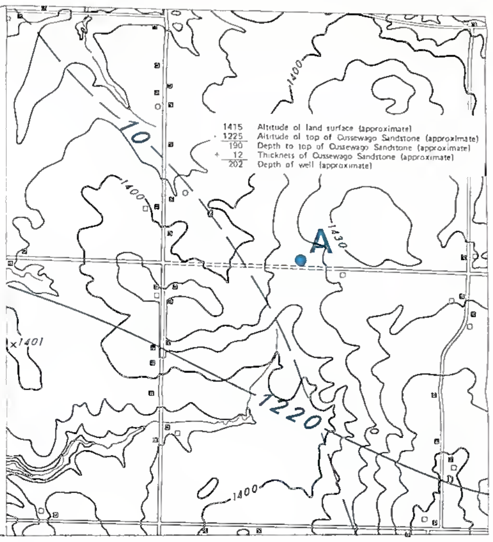
Well

Upper number is altitude at top of Cussewago Sandstone, in feet above mean sea level. Lower number is thickness of Cussewago Sandstone, in feet.

Estimated (refers to altitude or thickness)

WHAT THIS MAP SHOWS AND HOW IT CAN BE USED

The Cussewago Sandstone is the most important water-bearing bedrock unit in the area because it generally yields dependable supplies of good-quality water. This map, by use of altitude and thickness lines and land surface altitude, indicates approximately how deep a well would have to be drilled to tap the formation. An example of how this map may be used is given below.



1415	Altitude of land surface (approximate)
- 1225	Altitude of top of Cussewago Sandstone (approximate)
190	Depth to top of Cussewago Sandstone (approximate)
+ 12	Thickness of Cussewago Sandstone (approximate)
202	Depth of well (approximate)

A well is to be located at point "A." The location lies about one quarter of the distance from the altitude line showing the top of the Cussewago Sandstone to be 1220 feet above mean sea level towards the altitude line of 1240 feet. Therefore, the top of the Cussewago is somewhat higher than 1220 feet or about 1225 feet above mean sea level at point "A." The topographic contours indicate the land surface is about 1415 feet above mean sea level at the well site. The well site is located a short distance from the line showing that the Cussewago is about 10 feet thick and towards the area where it is 20 feet thick. It is reasonable, then, to assume that the Cussewago thickness at point "A" is about 11 or 12 feet. The depth to the top of the Cussewago is obtained by subtracting the altitude of the top of the Cussewago from the land surface altitude (1415 feet - 1225 feet = 190 feet), and its thickness is read as 12 feet. Thus, a well designed to completely penetrate the Cussewago would have to be drilled to a depth of about 202 feet (190 feet to the top, plus a thickness of 12 feet).

In the areas of outcrop of the Cussewago Sandstone the formation is commonly covered by glacial deposits. Therefore, the map showing the thickness of drift in the outcrop areas indicates the approximate depth to the top of the Cussewago. The thickness of the Cussewago may vary considerably in the outcrop areas and is difficult to predict because of erosion.

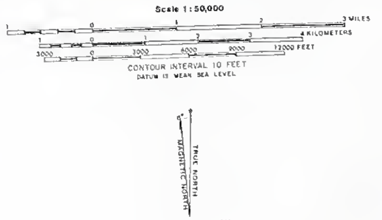
MAP SHOWING EXTENT, THICKNESS, AND STRUCTURE OF THE CUSSEWAGO SANDSTONE IN WESTERN CRAWFORD COUNTY, PENNSYLVANIA

BY

GEORGE R. SCHINER AND JOHN T. GALLAHER

1979

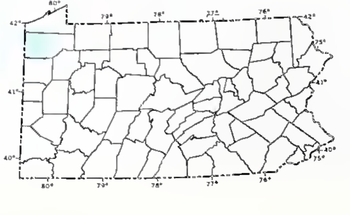
Scale 1:50,000



CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

APPROXIMATE MEAN DECLINATION, 1973

LOCATION OF AREA



Geology by G. R. Schiner, 1976.

Virginia M. Milewski and Albert E. VanOlden, Cartographers